

**5510/5530 BROADWAY**

**BRONX, NEW YORK**

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# **Remedial Action Report**

**NYC VCP Project Number 13CVCP105X / 14CVCP170X**

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**OCTOBER 2015**

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## LIST OF ACRONYMS

<b>Acronym</b>	<b>Definition</b>
CAMP	Community Air Monitoring Plan
DER-10	NYS DEC Division of Environmental Remediation Technical Guidance Manual 10
EC	Engineering Control
HASP	Health and Safety Plan
IC	Institutional Control
NYC VCP	New York City Voluntary Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York City Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
ORC	Oxygen Release Compound
PID	Photoionization Detector
QA/QC	Quality Assurance/Quality Control
QEP	Qualified Environmental Professional
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan
SCG	Standards, Criteria and Guidance
SCO	Soil Cleanup Objective
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SVOCs	Semi-Volatile Organic Compounds
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

## CERTIFICATIONS

I, Charles J. McGuckin, certify the following:

- I am currently a registered professional engineer licensed by the State of New York.
- I performed professional engineering services and had primary direct responsibility for implementation of the remedial program for the 5510 Broadway and 5530 Broadway sites, site numbers 13CVCP105X and 14CVCP170X. I certify to the following:
  - I have reviewed this document, to which my signature and seal are affixed.
  - Engineering Controls implemented during this remedial action were designed by me or a person under my direct supervision and achieve the goals established in the Remedial Action Work Plan for this site.
  - The Engineering Controls constructed during this remedial action were professionally observed by me or by a person under my direct supervision and (1) are consistent with the Engineering Control design established in the Remedial action Work Plan and (2) are accurately reflected in the text and drawings for as-built design reported in this Remedial Action Report.
- The OER-approved Remedial Action Work Plans dated June 2013 and February 2014 and Stipulations in a letter dated April 16, 2014 were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquids or other material from the property were taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

Charles J. McGuckin, P.E.  
NYS Professional Engineer #069509

October 28, 2015  
Date



I, Craig A. Werle, certify the following:

I am a Qualified Environmental Professional.

- I had primary direct responsibility for implementation of the remedial program for the 5510 Broadway and 5530 Broadway sites, site numbers 13CVCP105X and 14CVCP170X.
- The OER-approved Remedial Action Work Plans dated June 2013 and February 2014 and Stipulations in a letter dated April 16, 2014 were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquids or other material from the property were taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

Craig A. Werle, P.G.  
Qualified Environmental Professional

October 28, 2015  
Date

  
Signature

## **EXECUTIVE SUMMARY**

Equity One (Northeast Portfolio), Inc. (Equity One) has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 5510/5530 Broadway in the Kingsbridge section of Bronx, New York. The Site consists of two contiguous tax lots that have been remediated and managed as one Site for the purposes of redevelopment. A Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A remedial action was performed pursuant to an OER-approved RAWP in a manner that has rendered the Site protective of public health and the environment consistent with the proposed use of the property. This RAR describes the remedial action performed under the RAWP. The remedial action described in this document provides for the protection of public health and the environment, complies with applicable environmental standards, criteria and guidance and applicable laws and regulations.

### **Site Location and Background**

The Site is located at 5510/5530 Broadway in the Kingsbridge section of Bronx, New York and is identified as Block 3266 and Lots 21 and 23 on the New York City Tax Map. Figure 1 shows the Site location. The Site is 19,000-square feet and is bounded by a de-mapped street (Kimberly Place) to the north, West 230<sup>th</sup> Street to the south, the Broadway Plaza NYC VCP Site to the east, and Broadway to the west. A map of the site boundary is shown in Figure 2. Currently, the Site has been redeveloped with a single two-story commercial building.

### **Summary of Redevelopment Plan**

The future use of the Site consists of retail redevelopment. Equity One holds a ground lease on the northern portion of the Site for 49 years with an option to purchase at the end. The site has been combined with the adjacent property to the south, located at 5510 Broadway and a two-story slab-on-grade building has been constructed. The new building has a 19,000 sq. ft. footprint and 35,000 gross sq.ft. on two stories. The building

covers the entire Site, and there is no open space or landscaped areas. The site consists of two lots, Block 3266, Lots 21 and 23.

Construction of the Site included excavation in limited areas to approximately four feet below grade to install pile caps, the remedial excavation of two hot spots on the northern portion of the Site, and excavation of several USTs encountered on the southern portion of the Site during construction. The basement structure from the former building located on the northern portion of the Site (**5530 Broadway**) was removed by excavation and backfilled to meet the surrounding grade at the Site. Removal of the basement structure was the only demolition that took place on the northern portion of the Site. On the southern portion of the Site (**5510 Broadway**, adjacent to West 230<sup>th</sup> Street), the former Getty gasoline station was demolished, including removal of the pump islands, canopy, and the former building that housed service bays and an office/store area. An active sub-slab depressurization system (SSDS) was installed beneath the entire building slab (across both 5530 and 5510 Broadway). The layout of the site development is presented in Figure 2.

The current zoning designation is commercial C 4-4, which allows for specialty and department stores, theatres and other commercial and office uses. The proposed use is consistent with existing zoning for the property.

### **Summary of Surrounding Property**

To the west the property is bounded by Broadway, and the elevated Number 1 subway line. Further west, across Broadway, are residential properties including several apartment complexes, and Public School 207. To the east the property is bounded Broadway Plaza NYC VCP Site. Further east is a railroad easement and the Major Deegan Expressway. To the north the property is bounded by a demapped street (Kimberly Place) and retail/commercial spaces. To the south the property is bounded by West 230<sup>th</sup> Street. Across West 230<sup>th</sup> Street are commercial and light industrial buildings and the continuation of the railroad easement. Figure 3 shows the surrounding land usage.

### **Summary of Past Site Uses of Site and Areas of Concern**

The **5510 Broadway** portion of the Site was historically in use as a gasoline service station since at least 1950 with the building and canopy shown on the 1950 Sanborn Map in the same configuration as prior to Site demolition. The prior available Sanborn Maps are from 1914 and 1900, and the property is shown to be vacant on both of these maps. The southern portion of the Site was inactive since at least 2009 when underground storage tank (UST) removals were performed at the Site.

The **5530 Broadway** portion of the Site was vacant at the time redevelopment began. A Phase I investigation performed in 2012 reported Sanborn fire insurance maps showing the Site to be undeveloped until at least 1950. There is a gap in the Sanborn map record from 1950 until 1978, when a single-story brick and concrete block structure was depicted in the northwest corner of the Site. The same building was depicted in subsequent Sanborn maps until 1998, where the Site was shown as a vacant lot. The gap in Sanborn maps between the years of 1914 to 1950 results in unknown use of the property during this time period.

### **Summary of the Work Performed under the Remedial Investigation**

Equity One performed the following scope of work at the **5510 Broadway** portion of the Site:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e., structures, buildings, etc.)
2. Installed eight soil borings across the entire project Site, and collected 16 soil samples for chemical analysis from the soil borings to evaluate soil quality
3. Collected eight groundwater samples from existing Site monitoring wells for chemical analysis to evaluate groundwater quality
4. Installed four soil vapor probes around Site perimeter and AOCs, and collected four samples for chemical analysis

The following scope of work was performed at the **5530 Broadway** portion of the Site:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);

2. Installed seven soil borings across the entire project Site, and collected 15 soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. To evaluate groundwater quality, three groundwater samples were collected from three temporary monitoring wells that were installed as part of the Phase II;
4. Installed four soil vapor probes around Site perimeter and collected four samples for chemical analysis.

### **Summary of Findings of Remedial Investigation**

The following are the findings of the Remedial Investigation performed at the **5510 Broadway** portion of the Site:

1. Elevation of the property ranges from 18 to 19 feet above sea level.
2. Depth to groundwater ranges from 11 to 13 feet below land surface (bls) at the Site.
3. Groundwater flow is generally from northwest to southeast beneath the Site.
4. Depth to bedrock is unknown as bedrock was not encountered during this RI or any of the previous investigations. Bedrock is at least 15 feet or greater below the surface.
5. The stratigraphy of the site, from the surface down to the maximum soil boring depth of 15 feet bls, consists of fill material underlain by fine sand with some silt and gravel. Fill material was used as backfill after the removal of several underground storage tanks from both the northwestern and southeastern corners of the Site.
6. Soil/fill samples collected during the RI showed volatile organic compound (VOC) concentrations in soil samples ranging from non-detect to a maximum concentration of 260,000 ppb of total xylenes in SB-2. All soil sample results, however, were below Track 2 Restricted Commercial Soil Cleanup Objectives (SCOs). Benzene, toluene, ethylbenzene and xylenes (BTEX) are the primary contaminants of concern in soil and groundwater. Chlorinated VOCs were detected in all of the soil samples; however, all detections were estimated values well below the Track 1 Unrestricted Use SCOs. Three metals (copper, lead and zinc) exceed the Track 1 Unrestricted Use SCOs, and none of these exceed the Track 2 Restricted Commercial SCOs. One pesticide was detected at a very low level (4,4'-DDE at an estimated concentration of 3.8 ppb in SB-5), which exceeds the Track 1 Unrestricted Use SCO, but is below the Track 2 Restricted Commercial SCO. No SVOCs or PCBs were detected in any of the soil samples. In general, these soil sample results are consistent with historical samples collected at the Site and typical of sites with known petroleum releases. These results do not indicate any on-Site source of chlorinated VOCs.

7. Groundwater samples collected during the RI showed no pesticides or PCBs in any groundwater samples. Several VOCs were identified in groundwater, primarily petroleum hydrocarbons, with the maximum concentration being 2,500 ppb of benzene in MW-9. Although chlorinated hydrocarbons were detected in three wells, all detections were below the Part 703.5 Class GA groundwater quality standards (GQS), and all were found at estimated concentrations below 1 ppb. SVOCs were only detected in two wells (naphthalene in MW-9 and MW-2 and phenol in MW-9). In general, these groundwater sample results are consistent with historical samples collected at the Site and typical of sites with known petroleum releases. These results do not indicate any on-Site source of chlorinated VOCs.
8. Soil vapor samples collected during the RI showed a variety of VOCs, including petroleum hydrocarbons and chlorinated VOCs. Concentrations of petroleum hydrocarbons were generally low to moderate with a maximum concentration of 40,000  $\mu\text{g}/\text{m}^3$  of isooctane in SV-2. PCE was detected in three of the four samples, and ranged in concentration from 75  $\mu\text{g}/\text{m}^3$  to 1,400  $\mu\text{g}/\text{m}^3$ . TCE was only detected in one sample (SV-2) at a concentration of 1,100  $\mu\text{g}/\text{m}^3$ . In general, these soil vapor sample results are consistent with historical samples collected at the Site and consistent with sample results from sites with known petroleum releases. The chlorinated VOCs are attributable to an offsite source since soil and groundwater sample results did not indicate an onsite source for them.

The following are the findings of the Remedial Investigation performed at the **5530 Broadway** portion of the Site:

1. Elevation of the property ranges from 18 to 20 feet above sea level.
2. Depth to groundwater ranges from 11 to 12 feet below land surface (bls) at the Site.
3. Groundwater flow is generally from northeast to southwest beneath the Site.
4. Depth to bedrock is unknown, as bedrock was not encountered during this RI. Bedrock is at least 20 feet or greater below the surface.
5. The stratigraphy of the site, from the surface down to the maximum soil boring depth of 20 feet bls, consists of fine sand, with some gravel. Most of the Site is covered with fill material that appears to have been historically used for grading purposes.
6. Laboratory results show exceedances of four VOCs including acetone (140 parts per billion (ppb), benzene (1,800 ppb in 10-12 foot, and 330 ppb at 13-15 foot interval), methylene chloride (350 ppb), and total xylenes (560 ppb in 10-12 foot, 6.2 ppb in 3-15 foot interval in two of the 15 samples from one soil boring (SB-5). The acetone and methylene chloride detections appear to be lab artifacts because

- they were also found in the associated lab blanks. Benzene and xylene exceed the Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs), however, they do not exceed the Track 2 Restricted Commercial SCOs. No other VOCs exceeded any of the criteria. The elevated hydrocarbon concentration detected in this sample reflects impacts from the adjacent former Getty station. SVOCs, all polycyclic aromatic hydrocarbons (PAHs), including benzo[a]anthracene (max. of 21,000 ppb); benzo[a]pyrene (max. of 23,000 ppb); benzo[b]fluoranthene (max. of 25,000 ppb); benzo[k]fluoranthene (max. of 11,000 ppb); chrysene (max. of 20,000 ppb); dibenzo[a,h]anthracene (max. of 3,900 ppb); and Indeno[1,2,3-cd]pyrene (max. of 18,000 ppb) exceeded Unrestricted Use SCOs as well as Track 2 Restricted Commercial SCOs. Several metals were detected above Unrestricted Use SCOs and included arsenic (19.5 ppm), barium (365 ppm), chromium (max of 49 ppm), copper (635 ppm), lead (max. of 601 ppm), mercury (max. of 0.31 ppm), nickel (40 ppm), and zinc (600 ppm) in multiple soil borings. Of these metals, arsenic and copper also exceeded the Track 2 Restricted Commercial SCO. PCBs were not detected in any of the soil borings. The detections described above are evenly distributed across the Site. The random distribution of metals and SVOCs is typical of urban fill material. Data collected during the RI is sufficient to delineate the vertical and horizontal distribution of contaminants in soil/fill at the Site.
7. Groundwater samples collected during the RI showed no PCBs in any sample. Several SVOCs were identified in groundwater (petroleum hydrocarbons); however, most concentrations were found at trace or estimated concentrations below 2 ppb and none exceeded Part 703.5 Class GA groundwater quality standards (GQS). Four VOCs were identified above Part 703.5 Class GA groundwater quality standards (GQS) in two of the groundwater samples and included benzene (at 400 ppb), isopropylbenzene (at 16 ppb), and methyl tertiary butyl ether (at 42 ppb) and one chlorinated hydrocarbon (PCE) (at 7.1 ppb). There were several detections of metals in groundwater, but sodium and manganese exceeded their respective GQS in dissolved groundwater samples. Overall, groundwater samples are consistent with soil samples and do not indicate a contaminant source on this property. Rather, the petroleum hydrocarbons detected in groundwater are consistent with the known (closed) petroleum spill at the neighboring former Getty gasoline station property.
  8. Soil vapor samples collected during the RI showed a variety of VOCs, including petroleum hydrocarbons and chlorinated hydrocarbons. Most compounds were detected at concentrations below  $50 \mu\text{g}/\text{m}^3$  except for acetone (maximum of  $161 \mu\text{g}/\text{m}^3$ ) and butane (maximum of  $690 \mu\text{g}/\text{m}^3$ ). Tetrachloroethylene (PCE) was identified in all four soil vapor samples and ranged from  $19 \mu\text{g}/\text{m}^3$  to  $1400 \mu\text{g}/\text{m}^3$ , and trichloroethylene (TCE) was detected at a maximum concentration of  $9.2 \mu\text{g}/\text{m}^3$ . TCA and carbon tetrachloride were not detected in soil vapor. The PCE and TCE concentrations are above the monitoring level ranges established within the State DOH soil vapor guidance matrix.

## **Summary of the Remedial Action**

The remedial actions achieved protection of public health and the environment for the intended use of the property. The remedial actions achieved all of the remedial action objectives established for the project and addressed applicable standards, criterion, and guidance; was effective in both the short-term and long-term and reduced mobility, toxicity and volume of contaminants; was cost effective and implementable; and used standards methods that are well established in the industry.

A summary of the milestones achieved in the Remedial Actions is as follows:

### **5510 Broadway**

A Remedial Investigation (RI) was performed on July 17 and 18, 2012. A RI Report was prepared to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A Site Contact List was established. The RAWP was released with a fact sheet for a 30 day public comment. The RAWP and Stipulation List were approved by the New York City Office of Environmental Remediation (OER) on April 16, 2014. A Pre-Construction Meeting was held on May 29, 2014. The remedial action was begun in July, 2014 and completed in November, 2014.

### **5530 Broadway**

A Remedial Investigation (RI) was performed on May 21 and 22, 2013. A RI Report was prepared to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A Site Contact List was established. A RAWP was prepared and released with a Fact Sheet on February 28, 2014 for a 30-day public comment period. The RAWP and Stipulation List were approved by the New York City Office of Environmental Remediation (OER) on April 16, 2014. A Pre-Construction Meeting was held on May 29, 2014. The remedial action was begun in July, 2014 and completed in November, 2014.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.

2. Performed a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Established Track 2 Restricted Commercial Soil Cleanup Objectives (SCO's). On both the 5510 and 5530 portions of the Site, excavation and removal of soil required for construction to a depth of 4 feet that included soil exceeding SCOs. On the **5530** portion of the Site, excavation and removal of soil/fill exceeding Track 2 Restricted Commercial SCOs in one hot spot location (soil boring SB-3).
4. The following excavations were performed as described below. A total of approximately 5,245 cubic yards of soil/fill was excavated and removed from the property.
  - a. On the **5510** portion of the Site:
    - i. Soil was removed to a depth of 4 feet below grade in select areas for the purposes of utility installation and building construction.
    - ii. Soil was removed in the areas where unknown tanks were encountered during construction, to depths of 10 feet and 9 feet bls, respectively.
      1. Two 550 gallon former gasoline USTs on the southwest side of the lot.
      2. One 1000 gallon former waste oil UST on the north side of the lot, beneath the former building foundation.
  - b. On the **5530** portion of the Site:
    - i. Soil was removed to a depth of 4 feet below grade in select areas for the purposes of utility installation and building construction.
    - ii. Soil was removed from the hotspot located at SB-3 from a 10 by 13 foot excavation to a depth of approximately 17 feet bls.
5. Excavated 75 cubic yards of non-hazardous soil/fill and transported to Bayshore Soil Management LLC; excavated approximately 140 cubic yards of petroleum contaminated soil/fill from the UST removals and transported to Clean Earth of Carteret, and approximately 5,030 cubic yards of construction soil and transported to Sky Materials Corp, Evergreen Recycling of Corona, Inc., and Metro Green LLC.
6. Collected and analyzed end-point samples to determine attainment of SCOs. Track 2 Restricted Commercial SCO's were achieved for all analytes, with the exception of copper in 2 samples. Copper was detected at concentrations of 300 mg/kg and 350 mg/kg in two sidewall samples from the SB-3 excavation. These detections slightly exceed the RCSCO of 270 mg/kg for this metal.

7. Removed underground storage tanks identified on the **5510** portion of the Site during excavation activities and remediated petroleum contaminated soil/fill in compliance with applicable laws and regulations.
8. Constructed an engineered Composite Cover System consisting of 6 inches of concrete slab underlain by 8 inches of clean sub-base material beneath the building, which covers the entire Site, to prevent human exposure to residual soil/fill remaining under the Site. The contractor for the cover construction was Eastman Cooke Construction.
9. Installed a Vapor Barrier System that consisted of 20 mil thick Stego<sup>®</sup> Wrap Vapor Barrier beneath the entire building slab. The contractor for the Vapor Barrier System construction was Eastman Cooke Construction.
10. Installation of an Active Sub-Slab Depressurization System consisting of a network of trenches (i.e., legs) utilizing geotextile fabric wrapped ¾-inch gravel with 4-inch diameter schedule 40 perforated PVC pipes aligned horizontally beneath the building slab and attached to a common lateral and then a 6-inch diameter steel vertical riser pipe that traverses the building slab, with vapors conveyed via a chase and vented above the roof of the building. An Ametek Rotron<sup>™</sup> 2-Hp regenerative blower Model No. EN505AX72ML capable of 90 cubic feet per minute (cfm) and 45 inches of water (in. of w.c.) was installed on the roof and connected to the vertical riser pipe. The regenerative blower has a low vacuum switch and an in-line air filter on the blower inlet. A warning light has been provided adjacent to the fire control panel to notify the building superintendent if the blower is not operating. Four soil vapor monitoring points were installed within the building footprint. During start-up of the blower, the soil vapor monitoring points were used to confirm the presence of sub-slab vacuum. The contractor for the Active Sub-Slab Depressurization System construction was Eastman Cook Construction. Residual soil is present beneath the cover layer and will be subject to Site Management under this Remedial Action. This active SSDS is a permanent engineering control and will be inspected at a defined frequency under an OER-approved long-term Site Management Plan by a QEP. QEP will submit Inspection and Certification Reports on system function to OER. In addition, monthly inspections will be performed by building superintendent staff of the operation of blower, integrity of couplings and seals in the SSDS chase piping, and vacuum readings in the manometer. QEP will establish a checklist for monthly inspections by building superintendent staff. These checklists will be maintained in a file onsite for inspection by OER and QEP and will be reported in QEP's periodic Inspection and Certification Report.
11. Residual soil is present beneath the cover layer and will be subject to Site Management under this Remedial Action.

12. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
13. Mobilized site security, equipment, utility mark outs and marking & staking excavation areas.
14. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
15. Sampled and analyzed excavated media as required by disposal facilities. Appropriately segregated excavated media onsite prior to disposal. Transported and disposed all soil/fill material at permitted facilities in accordance with all applicable laws and regulations for handling, transport, and disposal, and the RAWP.
16. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
17. Imported RCA to be used for backfill in compliance with the Remedial Action Work Plan and in accordance with applicable laws and regulations.
18. Submitted a Sustainability Report.
19. Submitted a RAR that describes the Remedial Action, certifies that the remedial requirements defined in the Remedial Action Work Plan have been achieved; defines the Site boundaries; describes all Engineering and Institutional Controls applicable to the Site; and describes any changes from the RAWP.
20. Submitted a Site Management Plan (SMP) for long-term management of residual soil, including plans for operation, maintenance, inspection and certification of the performance of Engineering Controls and Institutional Controls. Inspections will be performed annually. Inspection and Certification reports will be submitted by July 30, 2017 (for the reporting period calendar year 2015-2016), July 30, 2018 (for the reporting period calendar years 2017) and every year thereafter (for the reporting period consisting of the prior calendar year). Inspection and Certification Reports will cover all calendar years since the prior reporting period.
21. Both properties will continue to be registered with an E-Designation by the NYC Department of Buildings. Engineering Controls and Institutional Controls will be managed in compliance with the SMP. Institutional Controls will include prohibition of the following: (1) prohibition of vegetable gardening and farming in residual soil; (2) prohibition of the use of groundwater beneath the site without treatment rendering it safe for the intended use; (3) prohibition of disturbance of residual soil material unless it is conducted in accordance with the SMP; and (4) prohibition of higher levels of land usage than the restricted commercial uses

addressed by this remedial action without prior notification and approval by OER.

# **REMEDIAL ACTION REPORT**

## **1.0 SITE BACKGROUND**

Equity One has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 5510/5530 Broadway in the Kingsbridge section of Bronx, New York. The boundary of the property subject to this Remedial Action is shown in Figure 1 and include, in their entirety, Bronx Block 3266 and Lots 21 and 23. The Remedial Action was performed pursuant to the OER-approved RAWPs in a manner that has rendered the property protective of public health and the environment consistent with its intended use. This RAR describes the remedial actions performed under the respective RAWPs. The remedial actions described in this document provide for the protection of public health and the environment, comply with applicable environmental standards, criteria and guidance and applicable laws and regulations.

### **1.1 SITE LOCATION AND BACKGROUND**

The Site is located at 5510/5530 Broadway in the Kingsbridge section of the Bronx, New York and is identified as Block 3266 and Lots 21 and 23 on the New York City Tax Map. Figure 1 shows the Site location. The 5510 portion of the Site is 7,500 square feet and is bounded by the 5530 portion of the Site, West 230<sup>th</sup> Street to the south, a new retail shopping center the east, and Broadway to the west. A map of the site boundary is shown in Figure 2. The 5510 portion of the Site is a former Getty service station, and the 5530 portion of the Site was a vacant lot. Currently, the Site has been redeveloped and the entirety of both Lots is occupied with a single 2-story commercial building.

### **1.2 REDEVELOPMENT PLAN**

The future use of the Site consists of retail redevelopment. Equity One holds a ground lease on the northern portion of the Site for 49 years with an option to purchase at the end. The site has been combined with the adjacent property to the south, located at 5510 Broadway and a two-story slab-on-grade building has been constructed. The new building has a 19,000 sq. ft. footprint and 35,000 gross sq.ft. on two stories. The building covers the entire Site, and there is no open space or landscaped areas. The site consists of

two lots, Block 3266, Lots 21 and 23. The New York City sidewalks adjacent to both lots on Broadway and West 230<sup>th</sup> Street are offsite and existed prior to redevelopment. These sidewalks were not modified during Site remediation or construction. The de-mapped street (Kimberly Place) to the north of the Site is part of the Broadway Plaza Site, an adjacent, but separate former NYC VCP redevelopment Site that completed VCP requirements in August 2012 (Site No. 12CVCP062X).

Construction of the Site included excavation in limited areas to approximately four feet below grade to install pile caps, the remedial excavation of two hot spots on the northern portion of the Site, and excavation of several USTs encountered on the southern portion of the Site during construction. The basement structure from the former building located on the northern portion of the Site (**5530 Broadway**) was removed by excavation and backfilled to meet the surrounding grade at the Site. Removal of the basement structure was the only demolition that took place on the northern portion of the Site. On the southern portion of the Site (**5510 Broadway**, adjacent to West 230<sup>th</sup> Street), the former Getty gasoline station was demolished, including removal of several USTs, the pump islands, canopy, and the former building that housed service bays and an office/store area. An active sub-slab depressurization system (SSDS) was installed beneath the entire building slab (across both 5530 and 5510 Broadway). The layout of the site development is presented in Figure 2.

The current zoning designation is commercial C 4-4, which allows for specialty and department stores, theatres and other commercial and office uses. The proposed use is consistent with existing zoning for the property.

### **1.3 DESCRIPTION OF SURROUNDING PROPERTY**

To the west the property is bounded by Broadway, and the elevated Number 1 subway line. Further west, across Broadway, are residential properties including several apartment complexes, and Public School 207. To the east the property is bounded by a

new retail shopping center and former NYC VCP redevelopment site. Further east is a railroad easement and the Major Deegan Expressway. To the north the property is bounded by a demapped street (Kimberly Place) and retail/commercial spaces. To the south the property is bounded by West 230<sup>th</sup> Street. Across West 230<sup>th</sup> Street are commercial and light industrial buildings and the continuation of the railroad easement.

#### **1.4 SUMMARY OF PAST SITE USES AND AREAS OF CONCERN**

On the **5510** portion of the Site, a remedial investigation was performed and the results are documented in a companion document called “*Remedial Investigation Report, Former Getty Service Station*”, dated November 2012 (RIR) (Appendix A). This portion of the Site was historically in use as a gasoline service station since at least 1950 with the building and canopy shown on the 1950 Sanborn Map in the same configuration as when the Site entered into the VCP. The prior available Sanborn Maps are from 1914 and 1900, and the property is shown to be vacant on both of these maps. The Site was inactive since at least 2009 when underground storage tank (UST) removals were performed.

The AOCs identified for this site include:

1. The historic 550-gallon tank field in the southeastern portion of the Site
2. The historic 4,000-gallon UST area in the northwestern portion of the Site
3. Former gasoline dispensers on the west and south sides of the Site
4. A 550-gallon tank discovered during tank removal activities in 2009, which was left in place on the western side of the Site

On the **5530** portion of the Site, a remedial investigation was performed and the results are documented in a companion document called “*Remedial Investigation Report, 5530 Broadway*”, dated July, 2013, and revised per NYC OER comments in November 2013 (RIR). The Site is currently owned by Equity One (Northeast Portfolio) Inc. and was vacant at the time the Site entered into the VCP. A Phase I investigation performed in 2012 reported Sanborn fire insurance maps showing the Site to be undeveloped until at least 1950. There is a gap in the Sanborn map record from 1950 until 1978, when a

single-story brick and concrete block structure is depicted in the northwest corner of the Site. The same building is depicted in subsequent Sanborn maps until 1998, where the Site is shown as a vacant lot. The gap in Sanborn maps between the years of 1914 to 1950 results in unknown use of the property during this time period.

No specific areas of concern (AOCs) were identified relative to the 5530 portion of the Site, other than fill blanketing the upper 5 to 10 feet of the Site, a closed spill number related to the adjacent Site (Spill No. 0904799), and an existing former basement filled with demolition building materials.

## **1.5 SUMMARY OF WORK PERFORMED UNDER THE REMEDIAL INVESTIGATION**

Equity One performed the following scope of work on the **5510** portion of the Site:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e., structures, buildings, etc.)
2. Installed eight soil borings across the entire project Site, and collected 16 soil samples for chemical analysis from the soil borings to evaluate soil quality
3. Collected eight groundwater samples from existing Site monitoring wells for chemical analysis to evaluate groundwater quality
4. Installed four soil vapor probes around Site perimeter and AOCs, and collected four samples for chemical analysis

### Getty Soil Remediation

The **5510** portion of the site was in the NYSDEC Spills program and undergoing remediation and monitoring by Getty at the time the Site was purchased by Equity One. In September 2012 Getty submitted a RAWP for the 5510 Site that was subsequently approved by the NYSDEC (previously provided in the 5510 RAWP as Appendix A). The RAWP (Appendix B) was implemented in April 2013. During the Remedial Action, approximately 1,000 cubic yards of impacted soil was removed and disposed of offsite. Also removed were three 550-gallon USTs from along Broadway (including the 550-gallon UST identified and left in place in 2009), four manifolded 50 gallon tanks adjacent

to the pump island along West 230<sup>th</sup> Street, and all associated piping. The post-excavation samples that were collected document residual soil quality remaining at the site. Based on the post-excavation sampling results, the remedial excavation was successful in removing all soil surrounding the former 4,000 gallon USTs that exceeds Track 2 Restricted Commercial SCO's. Additional details of Getty's April 2013 remedial activities are provided in Tyree Environmental Corp.'s *Site Excavation Report*, July 2013 (Appendix I5). Roux Associates was present onsite to observe this work.

Following the submittal of the July 2013 Site Excavation Report, the last of the remaining open Spill Numbers (0904799 and 9311138) were closed in November and December 2013, respectively. Spill closure records for all historical Spill Numbers as contained in the New York State Spill Incidents Database are included in Appendix J.

Equity One performed the following scope of work on the **5530** portion of the Site:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e., structures, buildings, etc.);
2. Installed seven soil borings across the entire project Site, and collected 15 soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. To evaluate groundwater quality, three groundwater samples were collected from three temporary monitoring wells that were installed as part of the Phase II;
4. Installed four soil vapor probes around Site perimeter and collected four samples for chemical analysis.

## **1.6 SUMMARY OF FINDINGS OF REMEDIAL INVESTIGATION**

Summary of environmental findings on the **5510** portion of the Site:

1. Elevation of the property ranges from 18 to 19 feet above sea level.
2. Depth to groundwater ranges from 11 to 13 feet below land surface (bls) at the Site.
3. Groundwater flow is generally from northwest to southeast beneath the Site.
4. Depth to bedrock is unknown as bedrock was not encountered during this RI or any of the previous investigations. Bedrock is at least 15 feet or greater below the surface.

5. The stratigraphy of the site, from the surface down to the maximum soil boring depth of 15 feet bls, consists of fill material underlain by fine sand with some silt and gravel. Fill material was used as backfill after the removal of several underground storage tanks from both the northwestern and southeastern corners of the Site.
6. Soil/fill samples collected during the RI showed VOC concentrations in soil samples ranging from non-detect to a maximum concentration of 260,000 ppb of total xylenes in SB-2. All soil sample results, however, were below Track 2 Commercial Soil Cleanup Objectives (SCOs). Benzene, toluene, ethylbenzene, and xylenes (BTEX) are the primary contaminants of concern in soil and groundwater. Chlorinated VOCs were detected in all of the soil samples; however, all detections were estimated values well below the Track 1 Unrestricted Use SCOs. Three metals (copper, lead, and zinc) exceed the Track 1 Unrestricted Use SCOs, and none of these exceed the Track 2 Restricted Commercial SCOs. One pesticide was detected at a very low level (4,4'-DDE at an estimated concentration of 3.8 ppb in SB-5), which exceeds the Track 1 Unrestricted Use SCO, but is below the Track 2 Restricted Commercial SCO. No SVOCs or PCBs were detected in any of the soil samples. In general, these soil sample results are consistent with historical samples collected at the Site and typical of sites with known petroleum releases. These results do not indicate any on-Site source of chlorinated VOCs.
7. Groundwater samples collected during the RI showed no pesticides or PCBs in any groundwater samples. Several VOCs were identified in groundwater, primarily petroleum hydrocarbons, with the maximum concentration being 2,500 ppb of benzene in MW-9. Although chlorinated hydrocarbons were detected in three wells, all detections were below the Part 703.5 Class GA groundwater quality standards (GQS), and all were found at estimated concentrations below 1 ppb. SVOCs were only detected in two wells (naphthalene in MW-9 and MW-2 and phenol in MW-9). In general, these groundwater sample results are consistent with historical samples collected at the Site and typical of sites with known petroleum releases. These results do not indicate any on-Site source of chlorinated VOCs.
8. Soil vapor samples collected during the RI showed a variety of VOCs, including petroleum hydrocarbons and chlorinated VOCs. Concentrations of petroleum hydrocarbons were generally low to moderate with a maximum concentration of 40,000  $\mu\text{g}/\text{m}^3$  of isooctane in SV-2. PCE was detected in three of the four samples, and ranged in concentration from 75  $\mu\text{g}/\text{m}^3$  to 1,400  $\mu\text{g}/\text{m}^3$ . TCE was only detected in one sample (SV-2) at a concentration of 1,100  $\mu\text{g}/\text{m}^3$ . In general, these soil vapor sample results are consistent with historical samples collected at the Site and consistent with sample results from sites with known petroleum releases. The chlorinated VOCs are attributable to an offsite source, since soil and groundwater sample results did not indicate an onsite source for them.

Summary of environmental findings on the **5530** portion of the Site:

1. Elevation of the property ranges from 18 to 20 feet above sea level.
2. Depth to groundwater ranges from 11 to 12 feet below land surface (bls) at the Site.
3. Groundwater flow is generally from northeast to southwest beneath the Site.
4. Depth to bedrock is unknown, as bedrock was not encountered during this RI. Bedrock is at least 20 feet or greater below the surface.
5. The stratigraphy of the site, from the surface down to the maximum soil boring depth of 20 feet bls, consists of fine sand, with some gravel. Most of the Site is covered with fill material that appears to have been historically used for grading purposes.
6. Analytical results were compared to NYSDEC 6NYCRR Part 375-6.8 Unrestricted Use Soil Cleanup Objectives (SCOs) and Restricted Residential Use SCOs. Results show exceedances of four VOCs and included acetone (140 parts per billion (ppb)), benzene (1,800 ppb in 10-12 foot, and 330 ppb at 13-15 foot interval), methylene chloride (350 ppb), and total xylenes (560 ppb in 10-12 foot, 6.2 ppb in 3-15 foot interval) in two of the 15 samples from one soil boring (SB-5). The acetone and methylene chloride detections appear to be lab artifacts because they were also found in the associated lab blanks. Benzene and xylene exceed the Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs), however, they do not exceed the Track 2 Restricted Commercial SCOs. No other VOCs exceeded any of the criteria. The elevated hydrocarbon concentration detected in this sample reflects impacts from the adjacent former Getty station. Several SVOCs, all polycyclic aromatic hydrocarbons (PAHs), including benzo[a]anthracene (max. of 21,000 ppb); benzo[a]pyrene (max. of 23,000 ppb); benzo[b]fluoranthene (max. of 25,000 ppb); benzo[k]fluoranthene (max. of 11,000 ppb); chrysene (max. of 20,000 ppb); dibenzo[a,h]anthracene (max. of 3,900 ppb); and Indeno[1,2,3-cd]pyrene (max. of 18,000 ppb) exceeded Unrestricted Use SCOs as well as Track 2 Restricted Commercial SCOs. Several metals were detected above Unrestricted Use SCOs and included arsenic (19.5 ppm), barium (365 ppm), chromium (max of 49 ppm), copper (635 ppm), lead (max. of 601 ppm), mercury (max. of 0.31 ppm), nickel (40 ppm), and zinc (600 ppm) in multiple soil borings. Of these metals, arsenic and copper also exceeded the Restricted Commercial SCO. PCBs were not detected in any of the soil borings. The detections described above are evenly distributed across the Site. The random distribution of metals and SVOCs is typical of urban fill material.
7. Groundwater samples collected during the RI showed no PCBs in any sample. Several SVOCs were identified in groundwater (petroleum hydrocarbons); however, most concentrations were found at trace or estimated concentrations below 2 ppb and none exceeded Part 703.5 Class GA groundwater quality

- standards (GQS). Four VOCs were identified above GQS in two of the groundwater samples and included benzene (at 400 ppb), isopropylbenzene (at 16 ppb), and methyl tertiary butyl ether (at 42 ppb) and one chlorinated hydrocarbon (PCE) (at 7.1 ppb). There were several detections of metals in groundwater, but only sodium and manganese exceeded their respective GQS in dissolved groundwater samples. Overall, groundwater results are consistent with soil results and do not indicate a contaminant source on this property. Rather, the petroleum hydrocarbons detected in groundwater are consistent with the known (closed) petroleum spill at the neighboring former Getty gasoline station property.
8. Soil vapor samples collected during the RI showed a variety of VOCs, including petroleum hydrocarbons and chlorinated hydrocarbons. Tetrachloroethylene (PCE) was identified in all four soil vapor samples and ranged from 19  $\mu\text{g}/\text{m}^3$  to 1400  $\mu\text{g}/\text{m}^3$ , and trichloroethylene (TCE) was detected at a maximum concentration of 9.2  $\mu\text{g}/\text{m}^3$ . The PCE and TCE concentrations are above the monitoring level ranges established within the State DOH soil vapor guidance matrix.

## **2.0 DESCRIPTION OF REMEDIAL ACTIONS**

The remedial action was performed in accordance with an OER approved Remedial Action Work Plan and achieved the remedial action objectives established for the project. The remedial action was evaluated in an alternatives analysis and was determined to be protective of human health and the environment, compliant with standards, criteria, and guidelines (SCGs), effective in the short-term, effective in the long-term, capable of attaining appropriate levels of reduction of toxicity, mobility, or volume of contaminated material, implementable, cost effective, acceptable to the community, consistent with land uses, and sustainable.

A summary of the milestones achieved in the Remedial Action at the **5510** portion of the Site is as follows: A Remedial Investigation (RI) was performed on July 17 and 18, 2012. A RI Report was prepared to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A Site Contact List was established. The RAWP was released with a Fact Sheet for a 30-day public comment period. The RAWP and Stipulation List were approved by the New York City Office of Environmental Remediation (OER) on April 16, 2014. A Pre-Construction meeting was held on May 29, 2014. The remedial action was begun on July 10, 2014 and completed on November 5, 2014.

A summary of the milestones achieved in the Remedial Action at the **5530** portion of the Site is as follows: A Remedial Investigation (RI) was performed on May 21 and 22, 2013. A RI Report was prepared to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A Site Contact List was established. A RAWP was prepared and released with a Fact Sheet on February 28, 2014 for a 30-day public comment period. The RAWP and Stipulation List were approved by the New York City Office of Environmental Remediation (OER) on April 16, 2014. A Pre-Construction meeting was held on May 29, 2014. The remedial action was begun on July 10, 2014 and completed on November 5, 2014.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Performed a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Established Track 2 Restricted Commercial Soil Cleanup Objectives (SCO's). On both the 5510 and 5530 portions of the Site, excavation and removal of soil required for construction to a depth of 4 feet that included soil exceeding SCOs. On the **5530** portion of the Site, excavation and removal of soil/fill exceeding Track 2 Restricted Commercial SCOs in one hot spot location (soil boring SB-3).
4. The following excavations were performed as described below. A total of approximately 5,245 cubic yards of soil/fill was excavated and removed from the property.
  - a. On the **5510** portion of the Site:
    - i. Soil was removed to a depth of 4 feet below grade in select areas for the purposes of utility installation and building construction.
    - ii. Soil was removed in the areas where unknown tanks were encountered during construction, to depths of 10 feet and 9 feet bls, respectively.
      1. Two 550 gallon former gasoline USTs on the southwest side of the lot.
      2. One 1,000 gallon former waste oil UST on the north side of the lot, beneath the former building foundation.
  - b. On the **5530** portion of the Site:
    - i. Soil was removed to a depth of 4 feet below grade in select areas for the purposes of utility installation and building construction.
    - ii. Soil was removed from the hotspot located at SB-3 from a 10 by 13 foot excavation to a depth of approximately 17 feet bls.
5. Excavated 75 cubic yards of non-hazardous soil/fill and transported to Bayshore Soil Management LLC; excavated approximately 140 cubic yards of petroleum contaminated soil/fill from the UST removals and transported to Clean Earth of Carteret, and approximately 5,030 cubic yards of construction soil and transported to Sky Materials Corp, Evergreen Recycling of Corona, Inc., and Metro Green LLC.
6. Collected and analyzed end-point samples to determine attainment of SCOs. Track 2 Restricted Commercial SCO's were achieved for all analytes, with the

exception of copper in 2 samples. Copper was detected at concentrations of 300 mg/kg and 350 mg/kg in two sidewall samples from the SB-3 excavation. These detections slightly exceed the RCSCO of 270 mg/kg for this metal.

7. Removed underground storage tanks identified on the **5510** portion of the Site during excavation activities and remediated petroleum contaminated soil/fill in compliance with applicable laws and regulations.
8. Constructed an engineered Composite Cover System consisting of 6 inches of concrete slab underlain by 8 inches of clean sub-base material beneath the building, which covers the entire Site, to prevent human exposure to residual soil/fill remaining under the Site. The contractor for the cover construction was Eastman Cooke Construction.
9. Installed a Vapor Barrier System that consisted of 20 mil thick Stego<sup>®</sup> Wrap Vapor Barrier beneath the entire building slab. The contractor for the Vapor Barrier System construction was Eastman Cooke Construction.
10. Installation of an Active Sub-Slab Depressurization System consisting of a network of trenches (i.e., legs) utilizing geotextile fabric wrapped ¾-inch gravel with 4-inch diameter schedule 40 perforated PVC pipes aligned horizontally beneath the building slab and attached to a common lateral and then a 6-inch diameter steel vertical riser pipe that traverses the building slab, with vapors conveyed via a chase and vented above the roof of the building. An Ametek Rotron<sup>™</sup> 2-Hp regenerative blower Model No. EN505AX72ML capable of 90 cubic feet per minute (cfm) and 45 inches of water (in. of w.c.) was installed on the roof and connected to the vertical riser pipe. The regenerative blower has a low vacuum switch and an in-line air filter on the blower inlet. A warning light has been provided adjacent to the fire control panel to notify the building superintendent if the blower is not operating. Four soil vapor monitoring points were installed within the building footprint. During start-up of the blower, the soil vapor monitoring points were used to confirm the presence of sub-slab vacuum. The contractor for the Active Sub-Slab Depressurization System construction was Eastman Cook Construction.
11. Residual soil is present beneath the cover layer and will be subject to Site Management under this Remedial Action.
12. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
13. Mobilized site security, equipment, utility mark outs and marking & staking excavation areas.
14. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.

15. Sampled and analyzed excavated media as required by disposal facilities. Appropriately segregated excavated media onsite prior to disposal. Transported and disposed all soil/fill material at permitted facilities in accordance with all applicable laws and regulations for handling, transport, and disposal, and the RAWP.
16. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
17. Imported RCA to be used for backfill in compliance with the Remedial Action Work Plan and in accordance with applicable laws and regulations.
18. Submitted a Sustainability Report.
19. Submitted a RAR that describes the Remedial Action, certifies that the remedial requirements defined in the Remedial Action Work Plan have been achieved; defines the Site boundaries; describes all Engineering and Institutional Controls applicable to the Site; and describes any changes from the RAWP.
20. Submitted a Site Management Plan (SMP) for long-term management of residual soil, including plans for operation, maintenance, inspection and certification of the performance of Engineering Controls and Institutional Controls. Inspections will be performed annually. Inspection and Certification reports will be submitted by July 30, 2017 (for the reporting period calendar year 2015-2016), July 30, 2018 (for the reporting period calendar years 2017) and every year thereafter (for the reporting period consisting of the prior calendar year). Inspection and Certification Reports will cover all calendar years since the prior reporting period.
21. Both properties will continue to be registered with an E-Designation by the NYC Department of Buildings. Engineering Controls and Institutional Controls will be managed in compliance with the SMP. Institutional Controls will include prohibition of the following: (1) prohibition of vegetable gardening and farming in residual soil; (2) prohibition of the use of groundwater beneath the site without treatment rendering it safe for the intended use; (3) prohibition of disturbance of residual soil material unless it is conducted in accordance with the SMP; and (4) prohibition of higher levels of land usage than the restricted commercial uses addressed by this remedial action without prior notification and approval by OER.

## **3.0 COMPLIANCE WITH REMEDIAL ACTION WORK PLAN**

### **3.1 HEALTH & SAFETY PLAN**

The remedial construction activities performed under this program were in compliance with the Health and Safety Plan and applicable laws and regulations. The Site Safety Coordinators were Joseph Gavin and Roy Thomas.

### **3.2 COMMUNITY AIR MONITORING PLAN**

The Community Air Monitoring Plan provided for the collection and analysis of air samples during remedial construction activities to ensure proper protections were employed to protect workers and the neighboring community. Monitoring was performed in compliance with the Community Air Monitoring Plan in the approved RAWP. The results of Community Air monitoring are shown in Appendix C.

### **3.3 SOIL/MATERIALS MANAGEMENT PLAN**

The Soil/Materials Management Plan provided detailed plans for managing all soil/materials that were disturbed at the Site, including excavation, handling, storage, transport and disposal. It also included a series of controls to assure effective, nuisance free remedial activity in compliance with applicable laws and regulations. Remedial construction activities performed under this program were in compliance with the SMMP in the approved RAWP.

### **3.4 STORM-WATER POLLUTION PREVENTION**

Storm water pollution prevention included physical methods and processes to control and/or divert surface water flows and to limit the potential for erosion and migration of Site soils, via wind or water. Remedial construction activities performed under this program were in full compliance with methods and processes defined in the RAWP for storm water prevention and applicable laws and regulations.

### **3.5 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN**

Soil removed for construction purposes following removal of all known petroleum

contamination was disposed at facilities that were not reported to, or accepted by, OER prior to disposal as required by the RAWP and documentation required by the RAWP was not properly prepared for soil disposal. There were no other deviations from the approved RAWPs and Stipulation Letters, with the exception of additional remedial work conducted to address three unknown USTs discovered during pile cap installation on the **5510** portion of the Site, and the NYC OER-approved elimination of two hotspot excavations (SB-1 and SB-9) prior to the commencement of remedial activities. All petroleum contaminated soils were appropriately managed and in compliance with the RAWP. The actions completed are protective of human health and the environment.

#### **5510 Broadway Deviations**

During the course of the installation of pile caps on the **5510** portion of the Site, a total of 3 USTs were discovered. Upon each discovery, construction activities were halted, the NYS OER Site manager was notified, and the tank removal procedure included as Appendix 1 in the April 16, 2015 Stipulation Letter was implemented. The results of the post-excavation sampling were discussed with both the NYC OER Site manager and the NYSDEC case manager for the former spill number relative to the Site. Both parties were satisfied with the remedial actions and deemed them complete.

#### **5530 Broadway Deviations**

Prior to the start of remedial activities, the SB-1 and SB-9 hotspots were removed from the scope of work with NYC OER approval.

## **4.0 REMEDIAL PROGRAM**

### **4.1 PROJECT ORGANIZATION**

Principal personnel who participated in the remedial action include:

- Michael Berfield – Executive Vice President - Equity One (Northeast Portfolio) Inc.
- Craig Werle, P.G. – Principal Hydrogeologist - Roux Associates, Inc.
- Wendy Monterosso – Project Manager - Roux Associates, Inc.
- Glenn Netuschil, P.E. – Senior Engineer - Roux Associates, Inc.
- Joseph Gavin, Project Hydrogeologist/Field Manager - Roux Associates, Inc.

The Professional Engineer (PE) and Qualified Environmental Professionals (QEP) for this project are:

- Charles McGuckin, P.E., Remedial Engineering
- Craig A. Werle, P.G., Roux Associates, Inc.

### **4.2 SITE CONTROLS**

#### **Site Preparation**

The first step in site preparation was mobilization. Mobilization began in July 2014 and was conducted as necessary for each phase of work at the Site. Mobilization included field personnel orientation, installation of construction fencing, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility mark-outs. Each field team member attended an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures. Additionally, the subcontractor was responsible for obtaining all required permits and approvals prior to the start of work.

Site grubbing took place in June 2014. Steps were taken to ensure that trucks departing the site did not track soil fill or debris off-Site. Such actions included use of stone egress paths and use of cleaned asphalt between the truck wash and the property exit. Measures

were taken to ensure that adjacent roadways were kept clean of project related soils, fill and debris.

The presence of utilities and easements on the Site were fully investigated prior to excavation or drilling by using the One-Call System (811). Utility companies and other responsible authorities were contacted to locate and mark the locations prior to the start of the invasive subsurface operations.

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations were employed during invasive and other work contemplated under the RAWP. The integrity and safety of on-Site and off-Site structures was maintained during all invasive, excavation or other remedial activity performed under the RAWP.

All applicable laws and regulations pertaining to storm-water pollution prevention were addressed during the remedial program. Erosion and sediment control measures identified in the RAWP (silt fences and barriers) were installed around the entire perimeter of the remedial excavation areas and inspected weekly and after every storm event to ensure that they were operating appropriately.

A pre-construction meeting was held with all contractors in May 2014. All applicable permits and approvals were obtained by the contractor prior to the start of work and were posted at the project entrance as required. An OER Project Notice was erected at the project entrance and was in place during all phases of the Remedial Action.

### **Soil Screening**

#### **5510 Broadway**

Soil was screened using a PID, and examined for evidence of odor or staining during excavation of the USTs. PID readings ranged from 4 parts per million (ppm) to 20 ppm for soil removed from the excavation of the two 550 gallon USTs on the southwestern side of the Site. PID readings ranged from 10 ppm to 100 ppm for soil removed from the excavation of the 1000 gallon UST on the northern side of the 5510 portion of the Site.

Odor and staining of the excavated soil was noted in the excavation of the former waste oil tank.

### **5530 Broadway**

Soil was screened using a PID, and examined for evidence of odor or staining during excavation from the hotspot at SB-3. PID readings were consistently less than 1 ppm for all soil removed from this excavation. No odor or staining of the excavated soil was noted.

### **Stockpile Management**

Soil removed from all of the remedial excavations was placed on 15-mil poly sheeting pending receipt of the post-excavation sampling analytical data. The soil stockpiles were covered with poly sheeting immediately following the completion of the excavation activities whenever possible. The stockpiles were kept covered at all times with appropriately anchored plastic sheeting, and were routinely inspected. Broken or ripped sheeting was promptly replaced. The soil stockpiles remained covered and were routinely inspected until they were loaded out for disposal at a licensed disposal facility.

### **Truck Inspection**

All transportation of materials was performed by licensed haulers in accordance with appropriate local, state, and federal regulations. Loaded vehicles leaving the Site were lined, tarped, securely covered, manifested, and placarded in accordance with appropriate federal, state, local and NYSDOT requirements. A truck wash was operated onsite, therefore all outbound trucks were inspected and brushed or washed as required to remove loose soil at the truck before leaving the Site. Proper utilization of manifests for trucking of remedial excavation soil leaving the Site from the SB-3 hotspot and UST removals was confirmed by the Roux onsite field oversight personnel. Red Hook and Roux Associates were responsible for completing the manifests for each truck leaving the Site.

### **Site Security**

The Site is fully enclosed with construction fencing with primary access located on the

West 230<sup>th</sup> Street side of the Site, at the intersection of Broadway. The Site had controlled access during working hours.

### **Nuisance Controls**

Odor was not an issue at the Site since the contaminants of concern were primarily metals, pesticides and SVOCs. However, proper controls were in place in case they were needed. Slight odor was noted when the third UST was removed from the ground on the northern side of the 5510 portion of the Site. The excavated soil from this location was covered with a tarp, as was the excavation itself, pending receipt of the post-excavation sample results. Following receipt of the analytical results and approval from NYC OER and NYS DEC, the excavation was backfilled and the stockpiled soil was removed from the Site as soon as possible.

Dust management during invasive on-Site work included, at a minimum:

- (a) use of a dedicated water spray methodology for roads, excavation areas and stockpiles (as needed);
- (b) use of properly anchored tarps/sheeting to cover stockpiles;
- (c) exercised extra care during dry and high-wind periods; and
- (d) use of gravel or recycled concrete aggregate on egress roadways to provide a clean and dust-free road surface.

This dust control plan was capable of controlling emissions of dust. If nuisance dust emissions were identified, work was halted and the source of dusts were identified and corrected. Work did not resume until all nuisance dust emissions had abated.

Noise control was exercised during the remedial program. All remedial work conformed, at a minimum, to NYC noise control standards. Throughout the duration of the remedial action, no citizen complaints were received.

## Reporting

In compliance with NYCOER-approved RAWP and Stipulation Letters dated April 16, 2014, daily reports providing a summary of activities were prepared. These reports included details of:

- Activities performed and progress made during excavation and site construction;
- Quantities of material imported and exported at Site; and
- Summary of Community Air Monitoring Plan (CAMP) excursions.

All daily and monthly reports are included in Appendix D. Digital photographs of the Remedial Action are also included in the Daily Reports in Appendix D.

### 4.3 MATERIALS EXCAVATION AND REMOVAL

Based on analytical results obtained during the Remedial Investigation at the Site, Track 2 Restricted Commercial SCOs were established in the RAWPs for both portions of the Site. The SCOs for the Site are listed in Table 1. A map showing the location where excavations were performed is shown in Figure 4. The laboratory reports for waste characterization and post-excavation sample results are included in Appendix E and Appendix F, respectively.

Roux Associates performed *in situ* waste characterization sampling during the RI work conducted in July 2012 and May 2013. The goal of the *in situ* waste characterization program was to collect sufficient analytical data to meet the requirements of various soil disposal facilities prior to start of the excavation. Samples were analyzed for the following parameters:

- VOCs via USEPA Method 8260;
- SVOCs via USEPA Method 8270;
- Target Analyte List (TAL) Metals via USEPA Method 6010;
- Pesticides/Polychlorinated Biphenyls (PCBs) via USEPA Methods 8081/8082;
- Total Petroleum Hydrocarbons (TPH) via USEPA Method 8015;
- Toxicity Characteristic Leaching Procedure (TCLP) VOCs;

- TCLP SVOCs;
- TCLP Metals;
- TCLP Pesticides;
- TCLP PCBs; and
- RCRA Characteristics– Ignitability, Corrosivity and Reactivity.

The results of these samples showed detections of several SVOCs, metals, and pesticides exceeding the Unrestricted Use SCOs. Three metals (lead, barium, and mercury) and one SVOC (Benzo[a]pyrene) exceeded the Restricted Commercial SCOs. There were no detections of TCLP SVOCs or TCLP pesticides, and only minor detections of TCLP VOCs and TCLP metals that did not exceed the United States Environmental Protection Agency Regulatory Levels. More details are available in the Remedial Investigation Report, May 2012.

#### Hotspot Excavation at SB-3

On July 7, 2014, a site orientation meeting was held with the Roux project manager, the general contractor, the excavator operator and the field oversight personnel. The area to be excavated around location SB-3 was measured and marked out with paint on the ground. On July 10, 2014, the soil hotspot at SB-3 was excavated. The excavation was approximately 10 feet by 10 feet wide and approximately 15 feet deep. On July 18, 2014, based on the post-excavation sample results, additional soil was removed from the bottom and the western sidewall of the SB-3 excavation to meet the Track 2 Restricted Commercial SCOs as established in the RAWP and Stipulation Letter. The final excavation limits were 10 feet by 13 feet by approximately 17 feet deep. Approximately 75 cubic yards of soil was removed from this location. The soil from this excavation was temporarily stockpiled on 15 mil thick poly sheeting adjacent to the excavation area, pending receipt of the post-excavation sample results from the laboratory. As described above, the stockpile was kept covered at all times with appropriately anchored plastic sheeting, and was routinely inspected, until it was loaded out for disposal.

### Pile-Cap Excavation Areas

General site excavation activities and pile-cap installations took place at the Site beginning in September and continued until November 2014. On October 7, 2014, post-excavation samples were collected from the final excavation grade at four locations (PE-1 through PE-4) on the **5510** portion of the Site, and three locations (PE-5 through PE-7) on the **5530** portion of the Site.

### **End Point Sample Results**

A total of 28 post-excavation grab samples, two duplicate samples, trip blanks, and field blanks were collected at the Site as described in the subsections below.

Four samples were collected from the SB-3 area excavation, two from the sidewall from 10 feet below grade and two from the bottom of the excavation from 15 feet and 17 feet below grade. These grab samples were analyzed for SVOCs and metals. Seven grab samples representing Site-wide conditions were collected from excavation areas in locations evenly distributed across the Site. These post-excavation grab samples were identified as PE-1 through PE-7 and were collected from depths ranging from 4 to 5 feet below grade (the final excavation grade). A map of post-excavation sample locations is shown in Figure 4. A tabular summary of post-excavation sampling results compared to SCOs is included in Tables 2 through 8. The Site-wide end-point samples were analyzed for the following parameters:

- SVOCs via USEPA Method 8270;
- TAL Metals via USEPA Method 6010;and
- Pesticides via USEPA Methods 8081.

All samples were collected in laboratory supplied containers, appropriately labeled, and placed in an ice-filled cooler. All samples were transported under chain of custody to Accutest Laboratories of Dayton, New Jersey for analysis.

### 5510 Broadway

#### Site Wide Post-Excavation Samples

A total of four post-excavation grab samples (PE-1 through PE-4) were collected from the final excavation grade on the 5510 portion of the Site. These samples were analyzed for metals and pesticides as required by the Stipulation Letter. Sample results indicated the following:

- Metals: All sample results were below the Track 2 NYSDEC Part 375 Restricted Commercial Soil Cleanup Objectives (RCSCOs). Three metals exceeded the Unrestricted Use SCOs (UUSCOs) as follows:
  - Lead exceeded the UUSCO [63 milligrams per kilogram (mg/kg)] in three samples, at concentrations ranging from 130 mg/kg (PE-4) to 450 mg/kg (PE-2);
  - Zinc exceeded the UUSCO (109 mg/kg) in three samples, at concentrations ranging from 120 mg/kg (PE-2) to 140 mg/kg (PE-1 and PE-4); and
  - Mercury exceeded the UUSCO (0.18 mg/kg) in one sample at a concentration of 0.21 mg/kg (PE-1).
- Pesticides: All sample results were below the RCSCOs. Two compounds exceeded the UUSCOs in one location (PE-3) and the duplicate sample from PE3 as follows:
  - 4,4'-DDE exceeded the UUSCO (3.3 µg/kg) in PE-3 at a concentration of 9.52 µg/kg.
  - 4,4'-DDT exceeded the UUSCO (3.3 µg/kg) in PE-3 at a concentration of 3.9 µg/kg.

#### UST Post-Excavation Samples

A total of 13 post-excavation grab samples and one duplicate sample were collected during the UST removals. These samples were analyzed for VOCs, SVOCs and metals. Sample results indicated the following:

- VOCs: All sample results were below the RCSCOs. Two compounds exceeded the UUSCOs in one sample (WSW-2) collected from the western sidewall of the 1000 gallon UST excavation on the northern side of the 5510 portion of the Site as follows:
  - Benzene exceeded the UUSCO (60 µg/kg) in WSW-2 at a concentration of 96 µg/kg; and
  - Total xylenes exceeded the UUSCO (260 µg/kg) in WSW-2 at a concentration of 430 µg/kg (estimated).

- SVOCs: All sample results were below both the RCSCOs and UUSCOs.
- Metals: All sample results were below the RCSCOs. All sample results were below the UUSCOs, with the exception of chromium in samples collected from the 1000 gallon UST excavation on the northern side of the 5510 portion of the Site as follows:
  - Chromium slightly exceeded the UUSCO (30 mg/kg) in three samples, in concentrations ranging from 37 mg/kg (ESW-2) to 38 mg/kg (EWS-1 and SSW-1).

### **5530 Broadway**

#### **Site Wide Post-Excavation Samples**

A total of three post-excavation grab samples (PE-5 through PE-7) were collected from the final excavation grade on the 5530 portion of the Site. These samples were analyzed for SVOCs and metals as required in the Stipulation Letter. Sample results indicated the following:

- SVOCs: All sample results were below both the RCSCOs and UUSCOs.
- Metals: All sample results were below the Track 2 NYSDEC Part 375 Restricted Commercial Soil Cleanup Objectives (RCSCOs). Four metals exceeded the Unrestricted Use SCOs (UUSCOs) as follows:
  - Copper exceeded the UUSCO (50 mg/kg) in two samples, at concentrations of 56 mg/kg (PE-7) and 69 mg/kg (PE-5);
  - Lead exceeded the UUSCO (63 mg/kg) in one sample at a concentration of 460 mg/kg (PE-5);
  - Mercury exceeded the UUSCO (0.18 mg/kg) in one sample at a concentration of 0.22 mg/kg (PE-5); and
  - Zinc exceeded the UUSCO (109 mg/kg) in one sample at a concentration of 150 mg/kg (PE-5).

#### **Hotspot Excavation at SB-3**

A total of four post-excavation grab samples were collected from the SB-3 hotspot excavation. As described above, two post-excavation samples [a bottom sample (SB-3 B) and a sidewall sample (SB-3 WSW)] were collected on July 10, 2014. The results of these samples indicated SVOC and metals exceedances of the RCSCOs. Based on these results, additional soil was excavated and two new post-excavation samples were

collected on July 18, 2014 to represent the final extent of the excavation. All samples were analyzed for SVOCs and metals as required in the Stipulation Letter. Sample results for the final extent post-excavation samples indicated the following:

- SVOCs: All sample results were below both the RCSCOs and UUSCOs.
- Metals: All sample results were below the RCSCOs, with exception of copper as described below. Four metals exceeded the Unrestricted Use SCOs (UUSCOs) as follows:
  - Copper exceeded the UUSCO (50 mg/kg) in both samples, at concentrations of 300 mg/kg (SB-3/WSW-2) and 350 mg/kg (SB-3/B-2);
  - Lead exceeded the UUSCO (63 mg/kg) in both samples at concentrations of 130mg/kg (SB-3/B-2) and 260 mg/kg (SB-3/WSW-2);
  - Mercury exceeded the UUSCO (0.18 mg/kg) in one sample at a concentration of 0.20 mg/kg (SB-3/WSW-2); and
  - Zinc exceeded the UUSCO (109 mg/kg) in both samples at a concentration of 430 mg/kg (SB-3/B-2 and SB-3/WSW-2).

These results demonstrate that the excavations performed at the Site during the Remedial Action were successful in removing SVOC, metal and pesticide impacted soil above the RCSCO as required in the RAWP, with the exception of copper which marginally exceeded RCSCO's.

The residual concentrations of copper above the Track 2 RCSCOs established for the Site were evaluated to assess the potential for environmental and public health impact. This evaluation shows that the building is protected with a 6-inch building slab and that exceedences in soils were all located below the building slab with no potential exposure pathways to occupants of the building. Similarly, despite elevated soil concentrations, groundwater does not exhibit exceedence of Groundwater Quality Standards for copper and there is no associated public health or environmental exposures. Finally, potential future exposures from soil excavation after the completion of the Remedial Action will be addressed by the development and implementation of the Site Management Plan in this RAR. On the basis of this evaluation, management of these soils in place was determined to be protective of public health and the environment.

#### 4.4 MATERIALS DISPOSAL

The material type, quantity and disposal location of material removed and disposed off-Site is presented below:

Disposal Location/Address	Type of Material	Quantity
Bayshore Recycling Corp./ 75 Crows Mill Road, Keasby, NJ	Non-Hazardous Soil	75 cubic yards
Clean Earth of Carteret / 24 Middlesex Avenue, Carteret, NJ	Petroleum Contaminated Soil	140 cubic yards
Republic Environmental Systems (PA) LLC / Hatfield, PA	Non-Hazardous Tank Sludge	1 55-gallon Drum
Republic Environmental Systems (PA) LLC / Hatfield, PA	Hazardous Tank Sludge	8 55-gallon Drums
Sky Materials Corp. / Calverton, NY	Construction Soil	5,030 cubic yards
Evergreen Recycling of Corona, Inc. / Corona, NY	Construction Soil	
Metro Green LLC / Mount Vernon, NY	Construction Soil	

Letters from the excavation subcontractor to disposal facility providing materials type, source and data, and acceptance letters from disposal facility stating it is approved to accept above materials are attached in Appendix G. Manifests for remedial soils (non-hazardous contaminated soil, petroleum contaminated soil, and tank sludge) are included in Appendix H. Soils removed during construction activities were sent to the three registered soil recyclers listed above, and no manifest documentation was generated. These three soil recycling facilities reviewed the characterization data and accepted the material. This was fully discussed with NYC OER when it became apparent. Documentation of the UST closures is also provided in Appendix I. Characterization sample results are presented in Table 8, and laboratory analytical results are provided in Appendix E.

#### **4.5 BACKFILL IMPORT**

No imported soil backfill was used during the course of the project. To backfill the excavations created by the UST removals, a total of 60 CY recycled concrete aggregate (RCA) was imported to the Site from Metro Green Recycling, LLC, of Vernon, New Jersey. NYC OER approved re-use of onsite construction soil to complete the backfilling of the UST excavations. Since RCA from a NYSDEC permitted facility was used, no chemical analysis was required for the backfill material. A map showing backfill placement locations at the Site is shown in Figure 5.

#### **4.6 DEMARCATION**

Soil below the final cover is residual soil that will be addressed by site management under this remedial action.

## **5.0 ENGINEERING CONTROLS**

Engineering Controls were employed in the Remedial Action to address residual materials remaining at the site. The Site has three primary Engineering Control Systems.

These are:

- (1) a Composite Cover System consisting of asphalt covered roads, concrete covered sidewalks, and concrete building slabs;
- (2) Vapor Barrier System;
- (3) Active Sub-Slab Depressurization System; etc.

### **Composite Cover System**

Exposure to residual soil/fill is prevented by an engineered Composite Cover System that has been built on the Site. This Composite Cover System is comprised of 9 inches of reinforced concrete slab underlain by RCA and re-used onsite construction soil beneath the building, which covers the entire Site. There is no asphalt cover and the previously existing adjacent sidewalks along West 230<sup>th</sup> Street and Broadway were not modified during the redevelopment. The contractor for the Composite Cover System construction was Eastman Cooke Construction.

Appendix K shows the as-built design for the Composite Cover System (i.e. building foundation) used on this Site. Figure 2 shows the location of each cover type built at the Site. Photographs of construction of the Composite Cover System are included in Appendix M.

### **Vapor Barrier System**

Exposure to soil vapor is prevented by a Vapor Barrier System that has been built on the Site. This Vapor Barrier System consists of 20-mil thick Stego<sup>®</sup> WrapVapor Barrier manufactured by Stego Industries, LLC., beneath the entire building foundation. The vapor barrier was installed as per manufacturer's instructions. The Vapor Barrier was overlapped a minimum of 6 inches at the seams and sealed with manufacturer supplied pressure sensitive tape (Stego<sup>®</sup> Tape). All penetrations (including the active sub-slab

depressurization solid 6-inch diameter vertical riser pipe and soil vapor monitoring points) were sealed with the pressure sensitive tape and/or manufacturer supplied Stego<sup>®</sup> Mastic, which is a water-based asphalt emulsion with a thick consistency. The professional engineer for the Vapor Barrier System was Charles J. McGuckin. The contractor for the Vapor Barrier System construction was Eastman Cooke Construction.

Appendix L includes the specifications for the Vapor Barrier System used on this Site. Photographs of installation of the Vapor Barrier System are included in Appendix M.

### **Active Sub-Slab Depressurization System**

Exposure to soil vapor is prevented by an Active Sub-Slab Depressurization System that has been built on the Site. This SSDS consists of a network of trenches (i.e., legs) installed in the existing Site soil and/or imported RCA (as discussed in Section 4.5) utilizing geotextile fabric wrapped  $\frac{3}{4}$ -inch gravel with 4-inch diameter schedule 40 perforated PVC pipes aligned horizontally beneath the building slab and attached to a common headers and then a 6-inch diameter steel vertical riser pipe that traverses the building slab, with vapors conveyed via a chase and vented above the roof of the building (Refer to Plate 1). An Ametek Rotron<sup>™</sup> 2-Hp regenerative blower Model No. EN505AX72ML capable of 90 cfm and 45 in. of w.c. located on the roof is connected to the vertical riser pipe. The regenerative blower has a low vacuum switch and an in-line air filter on the inlet. A warning light has been provided and is located adjacent to the fire control panel to notify the building superintendent if the blower is not operating.

Four soil vapor monitoring points were installed within the building footprint (SV-1 to SV-4) as shown on Plate 1. During start-up of the blower, the soil vapor monitoring points were used to confirm the presence of sub-slab vacuum. On October 13, 2015, the soil vapor monitoring points were checked with a micromanometer to confirm that the SSDS is operating properly (i.e., maintaining a minimum vacuum of 0.004 in. w.c.). The vacuum testing results are summarized in Appendix N. The results indicated that a minimum vacuum of 0.004 in. w.c. was achieved at each of the soil vapor monitoring points. The design engineer for the active SSDS was Charles J. McGuckin. The

contractor for the active SSDS construction was Eastman Cooke Construction. Plate 1 shows the as- built design for the SSDS used on this Site. Appendix L includes the specifications for the Active SSDS blower. Photographs of installation of the SSDS piping, soil vapor monitoring points, and installed blower are included in Appendix M.

## **6.0 INSTITUTIONAL CONTROLS**

A series of Institutional Controls are required under this Remedial Action to assure permanent protection of public health by elimination of exposure to residual materials. These IC's define the program to operate, maintain, inspect and certify the performance of Engineering Controls and Institutional Controls on this property. These Institutional Controls will be implemented in accordance with the Site Management Plan included in this RAR.

Institutional Controls for this property are:

- (1) The property will continue to be registered with an E-Designation by the NYC Department of Buildings. Property owner and property owner's successors and assigns are required to comply with the approved SMP;
- (2) Compliance with an OER-approved Site Management Plan including procedures for appropriate operation, maintenance, inspection, and certification of performance of EC's and IC's. The property owner and property owner's successors and assigns will inspect EC's and IC's and submit to OER a written certification that evaluates their performance in a manner and at a frequency to be determined by OER;
- (3) Engineering Controls will not be discontinued without prior OER approval;
- (4) OER has the right to enter the Site upon notice for the purpose of evaluating the performance of EC's and IC's;
- (5) Vegetable gardens and farming in residual soil/fill on the Site are prohibited;
- (6) Use of groundwater underlying the Site without treatment rendering it safe for its intended use is prohibited;
- (7) All future activities on the Site that will disturb residual soil/fill must be conducted pursuant to the Soil/Materials Management provisions of the SMP, or otherwise approved by OER;
- (8) The Site is intended to be used for restricted commercial use and will not be used for a higher level of use without prior approval by OER.

## **7.0 SITE MANAGEMENT PLAN**

Site Management is the last phase of the remedial process and begins after the approval of the Remedial Action Report (RAR) and issuance of the Notice of Completion (NOC) by OER. It is the responsibility of the property owner to ensure that all Site Management responsibilities are performed. The penalty for failure to implement the SMP includes revocation of the Notice of Completion and all associated certifications and liability protections.

Engineering Controls and Institutional Controls have been incorporated into this Remedial Action to ensure that the site remains protective of public health and the environment. Generally, EC's provide physical protective measures and IC's provide restrictions on Site usage and establish remedial operation, maintenance, inspection and certification measures. This Site Management Plan has been established to govern long-term performance of EC's and IC's for this property.

The SMP provides a detailed description of procedures required to manage residual material at the Site following the completion of remedial construction in accordance with the NYC Voluntary Cleanup Agreement with OER. This includes: (1) operation and maintenance of Engineering Controls; (2) inspection of EC's and IC's; and (3) certification of performance of EC's and IC's.

### **ENGINEERING CONTROLS**

Engineering Controls were employed in the remedial action to address residual materials remaining at the site. The Site has three Engineering Control Systems. Engineering Controls for this property are:

- (1) A Composite Cover System consisting of asphalt covered roads, concrete covered sidewalks, and concrete building slabs;
- (2) Vapor Barrier System;
- (3) Active Sub-Slab Depressurization System.

### **Operation and Maintenance of Composite Cover System**

Chapter 5 describes the Composite Cover System utilized in this Remedial Action and provides as-built design details and the location of each cover type. The Composite Cover System is a permanent Engineering Control for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP. A Soil/Materials Management Plan is included in this Site Management Plan and outlines the procedures to be followed in the event that the composite cover system and underlying residual soil/material must be disturbed after the Remedial Action is complete.

The Composite Cover System does not require any special operation or maintenance activities. If the system is breached during future construction activities, the system will be rebuilt by reconstructing the system according to the original design and tying newly constructed cover layers into existing cover layers to form a continuous layer(s).

### **Operation and Maintenance of Vapor Barrier System**

Chapter 5 describes the Vapor Barrier System utilized in this Remedial Action and provides as-built design details and the system location. The Vapor Barrier System is a permanent Engineering Control for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP.

The Vapor Barrier System does not require any special operation or maintenance activities. If the system is breached during future construction activities, the system will be rebuilt by reconstructing the vapor barrier layers and sealing the newly constructed materials with existing barrier materials in accordance with manufacturer specifications.

### **Operation and Maintenance of Active Sub-Slab Depressurization System**

Chapter 5 describes the Active Sub-Slab Depressurization System utilized in this Remedial Action and provides as-built design details and the system location. The SSDS is a permanent Engineering Control for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP.

The SSDS will be operated and maintained as prescribed below.

All equipment maintenance will be performed in accordance with manufacturer's instructions. Specific routine maintenance tasks are outlined below:

- The Building Superintendant will be trained by Roux Associates to conduct routine monthly monitoring. Specific monitoring will include:
- Verify system is on and operating;
- Inspect vacuum gauge for proper operation;
- Inspect seals and couplings in SSDS chase piping;
- Check and clean in-line air filter; and
- Any problems will be reported to Roux Associates immediately which will result in a site visit to trouble shoot the issue.

## **INSTITUTIONAL CONTROLS**

A series of Institutional Controls are required under this Remedial Action to assure permanent protection of public health by elimination of exposure to residual materials. These IC's define the program to operate, maintain, inspect and certify the performance of Engineering Controls and Institutional Controls on this property. These Institutional Controls will be implemented in accordance with the Site Management Plan included in this RAR.

Institutional Controls are also designed to prevent future exposure to residual soil/materials by controlling disturbances in the subsurface, restrict higher uses of the property than those addressed by the Remedial Action and establish restrictions on activities and site usage. Institutional Controls for this property are:

- (1) The property will continue to be registered with an E-Designation by the NYC Department of Buildings. Property owner and property owner's successors and assigns are required to comply with the approved SMP;
- (2) Compliance with an OER-approved Site Management Plan including procedures for appropriate operation, maintenance, inspection, and certification of performance of EC's and IC's. The property owner and property owner's successors and assigns will inspect EC's and IC's and submit to OER a written certification that evaluates their performance in a manner and at a frequency to be determined by OER;

- (3) Engineering Controls will not be discontinued without prior OER approval;
- (4) OER has the right to enter the Site upon notice for the purpose of evaluating the performance of EC's and IC's;
- (5) Vegetable gardens and farming in residual soil/fill on the Site are prohibited;
- (6) Use of groundwater underlying the Site without treatment rendering it safe for its intended use is prohibited;
- (7) All future activities on the Site that will disturb residual soil/fill must be conducted pursuant to the Soil/Materials Management provisions of the SMP, or otherwise approved by OER;
- (8) The Site is intended to be used for restricted commercial use and will not be used for a higher level of use without prior approval by OER.

## **INSPECTIONS**

Engineering Controls and Institutional Controls will be inspected on an annual basis.

The inspections will evaluate the following:

- If Engineering Controls or Institutional Controls employed at the Site continue to perform as designed and continue to be protective of human health and the environment;
- If anything has occurred that impairs the ability of the Engineering Controls or Institutional Controls to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this SMP has been maintained;
- If site records are complete and up to date; and
- General Site conditions at the time of inspection.

In addition, if an emergency occurs, such as a natural disaster, or if an unforeseen failure of any of the Engineering Controls occurs, an inspection of the Site will be performed within 30 days to evaluate the Engineering Controls and a letter report of findings will be submitted to OER.

### **Inspection of Composite Cover System**

The inspection of the Composite Cover System will consist of visual observations to determine the occurrence of cracks and damage to the concrete slab and pavement. The steel reinforcement in the concrete slab is expected to limit the width of any cracks that may form by providing load transfer and aggregate interlock. In the event that cracks of greater than or equal to 1/8-inch width do form in the concrete slab, cracks should be repaired by epoxy injection or similar American Concrete Institute (ACI) recommended crack repair methods. The Site building managers will be notified so the concrete slab can be repaired as soon as possible.

### **Inspection of Vapor Barrier System**

In the event that the inspection of the Composite Cover System as described above indicates any new penetrations or damage to the slab, the vapor barrier will be inspected and repaired as appropriate prior to repair of the slab.

### **Inspection of Active Sub-Slab Depressurization System**

The routine maintenance activities include monthly visual inspections, operating data collection and general maintenance. Visual inspection will be the routine part of the Active SSDS operator's activities. The system operator will note any conditions which present a potential hazard or could cause future system shutdown on an Operating Log (Appendix O). In the field, special attention will be paid to the condition of the blower and appurtenances, and the above slab vertical riser piping and supports. Special attention should be given to any unusual or excessive noise or vibrations from the piping and blower. The piping, seals and couplings will be inspected for leaks. Operation of the system will be verified. Vacuum gauge will be inspected for proper operation. The in-line filter will be inspected and replaced as necessary.

In addition to inspections by a QEP, monthly inspections will be performed by building superintendent staff. These staff will be trained by the QEP on the systems to be evaluated and a checklist will be established by the QEP to be filled out by the building superintendent each month. These checklists will be maintained on site for inspection by OER and the QEP and will be reported in QEP's periodic Inspection and Certification Report. These

inspections by building superintendent staff will include observation of the pressure reading in the manometer, active operation of the blower, and integrity of couplings and seals in SSDS chase piping with special attention in the vicinity of the blower to system leakage.

### **Site Use Prohibitions**

Inspections to evaluate the status of site use prohibitions will include an evaluation of whether there is vegetable gardening or farming in residual soil/fill; whether groundwater underlying the site has been used without treatment rendering it safe for its intended use; whether activities that have disturbed site soil/fill have been conducted pursuant to the Soil/Material Management provisions of the SMP, or otherwise approved by OER; and whether the site has been used for a higher level of use other than the restricted commercial use addressed by the Remedial Action.

### **INSPECTION AND CERTIFICATION LETTER REPORT**

Results of inspections performed during a reporting period and certification of performance of all Engineering Controls and Institutional Controls will be included in an Inspection and Certification Letter Report filed by a QEP. Inspections will be performed annually. Inspection and Certification Letter Reports will be submitted by July 30, 2017 (for the reporting period calendar years 2015-2016), July 30, 2018 (for the reporting period calendar year 2017) and every year thereafter (for the reporting period consisting of the prior calendar year). Inspection and Certification Reports will cover all calendar years since the prior reporting period. Inspection and Certification Letter Reports will be submitted to OER in digital format. The letter report will include, at a minimum:

- Date of inspections;
- Personnel conducting inspections;
- Description of the inspection activities performed;
- Any observations, conclusions, or recommendations;
- Copy of any inspection forms and summary of building superintendent monthly inspections;

- Certification of the performance of Engineering Controls and Institutional Controls, as discussed below.

The certification of the performance of EC's and IC's will establish:

- If Engineering Controls or Institutional Controls employed at the Site continue to be in place and perform as designed and continue to be protective of human health and the environment;
- If anything has occurred that impairs the ability of Engineering Controls or Institutional Controls to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this Site Management Plan has been maintained;
- If vegetable gardening and farming in residual soils has been prevented;
- If groundwater underlying the Site being utilized without treatment rendering it safe for the intended purpose has been prevented;
- If activities on the Site that have disturbed residual soil/fill material have been in accordance with the Soil/Materials Management Plan in this SMP;
- If the Site has been used for a higher level of use other than the restricted commercial use addressed by the Remedial Action;
- If site records are complete and up to date;
- If the Site continues to be registered as an E-Designated property by the NYC Department of Buildings;

OER may enter the Site upon notice for the purpose of evaluating the performance of EC's and IC's.

## **NOTIFICATIONS**

Notifications will be submitted by the property owner to OER as described below:

- 60-day advance notice of any proposed changes in Site use, such as an upgrade from existing use to residential use that was not contemplated in the Remedial Action.

- Notice within 30 days of any emergency, such as a fire, flood, or earthquake that has the potential to reduce the effectiveness of Engineering Controls in place at the Site.

## **SOIL/MATERIALS MANAGEMENT PLAN**

Any future intrusive work that will disturb residual soil/fill beneath the property, including modifications or repairs to the existing composite cover system, will be performed in compliance with this Soil/Materials Management Plan (SMMP). Intrusive work will also be conducted in accordance with the procedures defined in the Community Air Monitoring Plan (CAMP) included in this chapter and a Construction Health and Safety Plan (HASP). The HASP is the responsibility of the property owner and should be in compliance with NYSDEC DER-10 Technical Guide and 29 CFR 1910 and 1926, and all other applicable Federal, State and City regulations. Intrusive construction work should be compliant with this SMMP and described in the next Inspection and Certification Letter Report.

### **Soil Screening Methods**

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional (QEP). Soil screening will be performed during any future intrusive work.

### **Stockpile Methods**

Stockpiles will be used to isolate excavated soil and will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 6-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

All stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with

applicable laws and regulations. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters, and other discharge points.

### **Characterization of Excavated Materials**

Soil/fill or other excavated media that is transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Excavated soil will only be reused on-site with prior approval by OER.

### **Materials Excavation, Load-Out and Departure**

The PE/QEP overseeing the remedial action will:

- oversee intrusive work and the excavation and load-out of excavated material;
- ensure that there is a party responsible for the safe execution of invasive and other work performed under this management plan;
- ensure that Site maintenance activities and maintenance-related grading cuts will not interfere with, or otherwise impair or compromise the remedial measures established during the remediation construction phase;
- ensure that the presence of utilities and easements on the Site has been investigated and that any identified risks from work proposed under this plan are properly addressed by appropriate parties;
- ensure that all loaded outbound trucks are inspected and cleaned if necessary before leaving the Site; and
- ensure that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site intrusive work.

Locations where vehicles exit the Site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

### **Off-Site Materials Transport**

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance.

Outbound truck transport routes are via West 230<sup>th</sup> Street. This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

### **Materials Disposal Off-Site**

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with applicable laws and regulations: (1) a letter from the PE/QEP or Enrollee to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation Site in Bronx, New York under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or Enrollee. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material.

Documentation associated with disposal of all material will include records and approvals for receipt of the material. All impacted soil/fill or other waste excavated and removed

from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Historic fill and contaminated soils taken off-Site will be handled as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility).

Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization sampling and analytical methods, sampling frequency, analytical results and QA/QC will be retained and included in the following Inspection and Certification Report. A manifest system for off-Site transportation of exported materials will be employed. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

#### **Materials Reuse On-Site**

All of the soil excavated during any future repair or construction purposes will be placed in the same excavation it was derived from or will be disposed of off-site unless otherwise approved by OER beforehand.

#### **Repair of Remedial Systems**

After completion of invasive work, any damage of the engineering controls (composite cover system, vapor barrier, etc.) will be restored to the original condition established during initial construction.

#### **Import of Backfill Soil from Off-Site Sources**

In the event that soil importation is needed for the backfilling purposes, this Section presents the requirements for imported fill materials. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives including NYSDEC Part 375 Track 2 Residential SCOs and groundwater protections standards. A process will be established to evaluate sources of backfill and cover soil to be imported to the Site, and will include an examination of source location, current and historical use(s), and any applicable documentation.

Material from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;
- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYS DEC; and
- Virgin quarried material or other materials with an approved Beneficial Use Determination (BUD) from NYSDEC for reuse as clean fill.

All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this SMP. The Inspection and Certification Report will report the source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill or soil cover was placed.

### **Source Screening and Testing**

Inspection of imported fill material will include visual, olfactory, and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as follows:

- Trucks with imported fill material will be in compliance with applicable laws and regulations and will enter the Site at designated locations;
- The PE/QEP is responsible to ensure that every truck load of imported material is inspected for evidence of contamination; and
- Fill material will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported material from the identified clean soil sources will be

taken at a minimum frequency of one sample for every 500 cubic yards of material. One composite sample will be collected from each source of virgin quarried material or other material with an NYSDEC approved BUD, unless otherwise approved by OER. Once it is determined that the fill material meets imported backfill or cover soil chemical requirements and is non-hazardous, and lacks petroleum contamination, the material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) may be imported from facilities permitted or registered by NYSDEC. A PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA will not be used as cover material.

### **Fluids Management**

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported, and disposed in accordance with applicable laws and regulations. Liquids discharged into the New York City sewer system will receive prior approval by New York City Department of Environmental Protection (NYC DEP). The NYC DEP regulates discharges to the New York City sewers under Title 15, Rules of the City of New York Chapter 19. If discharge to the City sewer system is not appropriate, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility. Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by NYSDEC.

### **Storm-water Pollution Prevention**

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during the remedial program. All existing stormwater systems will be inspected to ensure proper operation.

## **Odor Control**

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEPs.

## **Dust Control**

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Exercise extra care during dry and high-wind periods.
- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEPs.

## **Noise**

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

## **COMMUNITY AIR MONITORING PLAN**

Real-time air monitoring for VOCs and particulate levels at the perimeter of the exclusion zone or work area will be performed. Continuous monitoring will be performed for all ground intrusive activities and during the handling of contaminated or potentially contaminated media. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence. Exceedences of action levels observed during performance of the Community Air Monitoring Plan (CAMP) will be reported to the OER Project Manager and included in the Daily Report.

### **VOC Monitoring, Response Levels, and Actions**

VOCs will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings must be recorded and be available for OER personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

### **Particulate Monitoring, Response Levels, and Actions**

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ( $\text{mcg}/\text{m}^3$ ) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed  $150 \text{ mcg}/\text{m}^3$  above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than  $150 \text{ mcg/m}^3$  above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within  $150 \text{ mcg/m}^3$  of the upwind level and in preventing visible dust migration.

All readings will be recorded and be available for OER personnel to review.

## CONTINGENCY PLAN

This contingency plan is developed for the remedial construction or repair work to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during invasive Site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYS DEC Spill Hotline. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs, as appropriate.

### Emergency Telephone Numbers

In the event of any emergency condition pertaining to these remedial systems, the Owner's representative(s) should contact the appropriate parties from the contact list below. Prompt contact should also be made to Craig Werle of Roux Associates, Inc. These emergency contact lists must be maintained in an easily accessible location at the Site.

#### Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center: 3 day notice required for utility markout	(800) 272-4480
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

**Contact Numbers**

Craig Werle, Roux Associates, Inc.	631-232-2600
Office of Environmental Remediation	(212) 788-8841; 311

## 8.0 SUSTAINABILITY REPORT

The Remedial Action Work Plan provided for sustainable remediation and redevelopment through a variety of means that are defined in this Sustainability Report.

**Reuse of Clean, Recyclable Materials.** Reuse of clean, recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction since these materials can be locally-derived.

An estimate of the amount of recycled material reused on this project is approximately 60 cubic yards of RCA.

**Conservation of Non-Renewable Resources.** Reduced consumption of non-renewable resources such as soil and top-soil lowers the overall environmental impact of the project on the region by conserving these resources.

Conservation of non-renewable resources was achieved by using RCA and clean onsite soil as backfill of the two UST excavations. An estimate of the amount of non-renewable resources, the use of which was avoided under this plan, is approximately 60 cubic yards.

**Recontamination Control.** Recontamination after cleanup and redevelopment is completed undermines the value of work performed, may result in a property that is less protective of public health or the environment, and may necessitate additional cleanup work later that could impede future redevelopment. Recontamination can arise from future releases that occur within the property or by influx of existing contamination from off-Site.

The Site is completely covered with a Composite Cover System that will prevent the onsite introduction of potentially contaminated liquids to the subsurface as a result of accidental spills. The entire Site is underlain by a Vapor Barrier and a Sub-Slab Depressurization System that will eliminate the possibility of any soil vapor intrusion into

the occupied space within the new building. The area of the Site that utilizes recontamination controls under this plan is 100% or 19,000 square feet.

**Paperless Brownfield Cleanup Program.** Equity One participated in OER's Paperless Brownfield Cleanup Program. Under this program, submission of electronic documents replaced submission of hard copies for the review of project documents, communications and milestone reports. A best estimate of the mass (pounds) of paper saved under this plan is 20 pounds.

**Low-Energy Project Management Program.** Equity One participated in OER's low-energy project management program. Under this program, whenever possible, meetings were held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation. A gross estimate of the number of miles of personal transportation that was conserved in this process is 500 miles.

**TABLES**

1. List of SCOs
2. Summary of Semivolatile Organic Compounds in Post-Excavation Samples
3. Summary of Metals in Post-Excavation Samples
4. Summary of Pesticides in Post-Excavation Samples
5. Summary of Volatile Organic Compounds in UST Post-Excavation Samples
6. Summary of Semivolatile Organic Compounds in UST Post-Excavation Samples
7. Summary of Metals in Post-Excavation Samples from UST Removals
8. Summary of Waste Characterization Sample Results

**Table 1. Summary of Soil Cleanup Objectives in Soil, 5510/5530 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375	NYSDEC Part 375
	Unrestricted Use	Commercial (µg/kg)
<b>Volatile Organic Compounds</b>		
1,1,1-Trichloroethane	680	500000
1,1,2,2-Tetrachloroethane	--	--
1,1,2-Trichloroethane	--	--
1,1-Dichloroethane	270	240000
1,1-Dichloroethene	330	500000
1,2,3-Trichlorobenzene	--	--
1,2,4-Trichlorobenzene	--	--
1,2-Dibromoethane	--	--
1,2-Dichlorobenzene	1100	500000
1,2-Dichloroethane	20	30000
1,2-Dichloropropane	--	--
1,3-Dichlorobenzene	2400	280000
1,4-Dichlorobenzene	1800	130000
1,4-Dioxane	100	130000
2-Butanone (MEK)	120	500000
2-Hexanone	--	--
4-Methyl-2-pentanone (MIBK)	--	--
Acetone	50	500000
Benzene	60	44000
Bromochloromethane	--	--
Bromodichloromethane	--	--
Bromoform	--	--
Bromomethane	--	--
Carbon disulfide	--	--
Carbon tetrachloride	760	22000
Chlorobenzene	1100	500000
Chloroethane	--	--
Chloroform	370	350000
Chloromethane	--	--
cis-1,2-Dichloroethene	250	500000
cis-1,3-Dichloropropene	--	--
Cyclohexane	--	--
Dibromochloromethane	--	--
Dibromochloropropane	--	--

**Table 1. Summary of Soil Cleanup Objectives in Soil, 5510/5530 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375	NYSDEC Part 375
	Unrestricted Use	Commercial (µg/kg)
<b>Volatile Organic Compounds</b>		
Dichlorodifluoromethane	--	--
Ethylbenzene	1000	390000
Freon 113	--	--
Isopropylbenzene	--	--
m+p-Xylene	--	--
Methyl acetate	--	--
Methylcyclohexane	--	--
Methylene chloride	50	500000
MTBE	930	500000
o-Xylene	--	--
Styrene	--	--
Tetrachloroethene	1300	150000
Toluene	700	500000
trans-1,2-Dichloroethene	190	500000
trans-1,3-Dichloropropene	--	--
Trichloroethene	470	200000
Trichlorofluoromethane	--	--
Vinyl chloride	20	13000
Xylenes (total)	260	500000
<b>Semivolatile Organic Compounds</b>		
1,1'-Biphenyl	--	--
1,2,4,5-Tetrachlorobenzene	--	--
2,2'-oxybis (1-chloropropane)	--	--
2,3,4,6-Tetrachlorophenol	--	--
2,4,5-Trichlorophenol	--	--
2,4,6-Trichlorophenol	--	--
2,4-Dichlorophenol	--	--
2,4-Dimethylphenol	--	--
2,4-Dinitrophenol	--	--
2,4-Dinitrotoluene	--	--
2,6-Dinitrotoluene	--	--
2-Chloronaphthalene	--	--
2-Chlorophenol	--	--
2-Methylnaphthalene	--	--
2-Methylphenol	330	500000

**Table 1. Summary of Soil Cleanup Objectives in Soil, 5510/5530 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375	NYSDEC Part 375
	Unrestricted Use	Commercial (µg/kg)
<b>Volatile Organic Compounds</b>		
2-Nitroaniline	--	--
2-Nitrophenol	--	--
3&4-Methylphenol	--	--
3,3'-Dichlorobenzidine	--	--
3-Nitroaniline	--	--
4,6-Dinitro-2-methylphenol	--	--
4-Bromophenyl phenyl ether	--	--
4-Chloro-3-methylphenol	--	--
4-Chloroaniline	--	--
4-Chlorophenyl phenyl ether	--	--
4-Nitroaniline	--	--
4-Nitrophenol	--	--
Acenaphthene	20000	500000
Acenaphthylene	100000	500000
Acetophenone	--	--
Anthracene	100000	500000
Atrazine	--	--
Benzaldehyde	--	--
Benzo[a]anthracene	1000	5600
Benzo[a]pyrene	1000	1000
Benzo[b]fluoranthene	1000	5600
Benzo[g,h,i]perylene	100000	500000
Benzo[k]fluoranthene	800	56000
Bis(2-chloroethoxy)methane	--	--
Bis(2-chloroethyl) ether	--	--
Bis(2-ethylhexyl) phthalate	--	--
Butylbenzyl phthalate	--	--
Caprolactam	--	--
Carbazole	--	--
Chrysene	1000	56000
Dibenzo[a,h]anthracene	330	560
Dibenzofuran	7000	350000
Diethyl phthalate	--	--
Dimethyl phthalate	--	--

**Table 1. Summary of Soil Cleanup Objectives in Soil, 5510/5530 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)
	<b>Volatile Organic Compounds</b>	
Di-n-butyl phthalate	--	--
Di-n-octyl phthalate	--	--
Fluoranthene	100000	500000
Fluorene	30000	500000
Hexachlorobenzene	330	6000
Hexachlorobutadiene	--	--
Hexachlorocyclopentadiene	--	--
Hexachloroethane	--	--
Indeno[1,2,3-cd]pyrene	500	5600
Isophorone	--	--
Naphthalene	12000	500000
Nitrobenzene	--	--
n-Nitrosodi-n-propylamine	--	--
n-Nitrosodiphenylamine	--	--
Pentachlorophenol	800	6700
Phenanthrene	100000	500000
Phenol	330	500000
Pyrene	100000	500000
<b>Metals</b>		
Aluminum	--	--
Antimony	--	--
Arsenic	13	16
Barium	350	400
Beryllium	7.2	590
Cadmium	2.5	9.3
Calcium	--	--
Chromium	30	1500
Cobalt	--	--
Copper	50	270
Iron	--	--
Lead	63	1000
Magnesium	--	--
Manganese	1600	10000
Mercury	0.18	2.8

**Table 1. Summary of Soil Cleanup Objectives in Soil, 5510/5530 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)
	<b>Volatile Organic Compounds</b>	
Nickel	30	310
Potassium	--	--
Selenium	3.9	1500
Silver	2	1500
Sodium	--	--
Thallium	--	--
Vanadium	--	--
Zinc	109	10000
<b>Pesticides</b>		
4,4'-DDD	3.3	92000
4,4'-DDE	3.3	62000
4,4'-DDT	3.3	47000
Aldrin	5	680
alpha-BHC	20	3400
beta-BHC	36	3000
Chlordane	--	--
delta-BHC	40	500000
Dieldrin	5	1400
Endosulfan I	2400	200000
Endosulfan II	2400	200000
Endosulfan sulfate	2400	200000
Endrin aldehyde	--	--
Endrin ketone	--	--
Endrin	14	89000
gamma-BHC (Lindane)	100	9200
Heptachlor epoxide	--	--
Heptachlor	42	15000
Methoxychlor	--	--
Toxaphene	--	--
<b>Polychlorinated Biphenyls</b>		
Total PCBs	100	1000

**Table 2. Summary of Semivolatile Organic Compounds in Post-Excavation Samples, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	Sample Designation:	SB-3 B	SB-3/B-2	SB-3 WSW	SB-3/WSW-2
			Sample Date:	7/10/2014	7/18/2014	7/10/2014	7/18/2014
			Sample Depth (ft bls):	15	17	10	10
			Sample Location:	5530	5530	5530	5530
1,1'-Biphenyl	--	--		130 U	480 U	49 U	530 U
1,2,4,5-Tetrachlorobenzene	--	--		130 U	210 U	49 U	230 U
1,2,4-Trichlorobenzene	--	--		NA	210 U	NA	230 U
1,2-Dichlorobenzene	1100	500000		NA	210 U	NA	230 U
1,3-Dichlorobenzene	2400	280000		NA	210 U	NA	230 U
1,4-Dichlorobenzene	1800	130000		NA	210 U	NA	230 U
2,2'-oxybis (1-chloropropane)	--	--		110 U	250 U	40 U	280 U
2,3,4,6-Tetrachlorophenol	--	--		130 U	NA	47 U	NA
2,4,5-Trichlorophenol	--	--		130 U	210 U	47 U	230 U
2,4,6-Trichlorophenol	--	--		110 U	120 U	42 U	140 U
2,4-Dichlorophenol	--	--		140 U	190 U	53 U	210 U
2,4-Dimethylphenol	--	--		240 U	210 U	90 U	230 U
2,4-Dinitrophenol	--	--		550 U	1000 U	210 U	1100 U
2,4-Dinitrotoluene	--	--		32 U	210 U	12 U	230 U
2,6-Dinitrotoluene	--	--		29 U	210 U	11 U	230 U
2-Chloronaphthalene	--	--		110 U	210 U	40 U	230 U
2-Chlorophenol	--	--		130 U	210 U	48 U	230 U
2-Methylnaphthalene	--	--		230 J	250 U	47 U	280 U
2-Methylphenol	330	500000		170 U	210 U	62 U	230 U
2-Nitroaniline	--	--		410 U	210 U	150 U	230 U
2-Nitrophenol	--	--		110 U	450 U	40 U	500 U
3&4-Methylphenol	330	500000		NA	300 U	NA	330 U
3,3'-Dichlorobenzidine	--	--		340 U	210 U	130 U	230 U
3-Nitroaniline	--	--		340 U	210 U	130 U	230 U
4,6-Dinitro-2-methylphenol	--	--		260 U	540 U	99 U	600 U
4-Bromophenyl phenyl ether	--	--		96 U	210 U	36 U	230 U
4-Chloro-3-methylphenol	--	--		150 U	210 U	55 U	230 U
4-Chloroaniline	--	--		260 U	210 U	96 U	230 U
4-Chlorophenyl phenyl ether	--	--		110 U	210 U	43 U	230 U
4-Methylphenol	330	500000		190 U	NA	71 U	NA

**Table 2. Summary of Semivolatile Organic Compounds in Post-Excavation Samples, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	Sample Designation:	SB-3 B	SB-3/B-2	SB-3 WSW	SB-3/WSW-2
	Part 375	Part 375	Sample Date:	7/10/2014	7/18/2014	7/10/2014	7/18/2014
	Unrestricted	Commercial	Sample Depth (ft bls):	15	17	10	10
	Use	(µg/kg)	Sample Location:	5530	5530	5530	5530
4-Nitroaniline	--	--		300 U	210 U	110 U	230 U
4-Nitrophenol	--	--		630 U	290 U	230 U	320 U
Acenaphthene	20000	500000		1000	65 J	53 U	180 U
Acenaphthylene	100000	500000		110 U	170 U	43 U	180 U
Acetophenone	--	--		150 U	210 U	56 U	230 U
Anthracene	100000	500000		2100	150	44 U	47 J
Atrazine	--	--		150 U	NA	56 U	NA
Benzaldehyde	--	--		110 U	NA	43 U	NA
Benzo[a]anthracene	1000	5600		<b>3700</b>	410	91	150
Benzo[a]pyrene	1000	1000		<b>3300</b>	410	120	150 J
Benzo[b]fluoranthene	1000	5600		<b>3800</b>	490	170	200
Benzo[g,h,i]perylene	100000	500000		3200	260	120 J	110 J
Benzo[k]fluoranthene	800	56000		<b>1800</b>	210	57	69 J
Benzoic Acid	--	--		NA	680 U	NA	750 U
Benzyl Alcohol	--	--		NA	210 U	NA	230 U
Bis(2-chloroethoxy)methane	--	--		130 U	220 U	47 U	250 U
Bis(2-chloroethyl) ether	--	--		13 U	190 U	4.9 U	210 U
Bis(2-ethylhexyl) phthalate	--	--		320 U	210 U	120 U	230 U
Butylbenzyl phthalate	--	--		89 U	210 U	33 U	230 U
Caprolactam	--	--		220 U	NA	84 U	NA
Carbazole	--	--		950 J	66 J	43 U	230 U
Chrysene	1000	56000		<b>3600</b>	400	110 J	160
Dibenzo[a,h]anthracene	330	560		<b>770</b>	72 J	46	140 U
Dibenzofuran	7000	350000		620 J	210 U	43 U	230 U
Diethyl phthalate	--	--		120 U	210 U	43 U	230 U
Dimethyl phthalate	--	--		120 U	210 U	43 U	230 U
Di-n-butyl phthalate	--	--		120 U	210 U	45 U	230 U
Di-n-octyl phthalate	--	--		62 U	210 U	23 U	230 U
Fluoranthene	100000	500000		7500	770	130 J	270
Fluorene	30000	500000		1100	63 J	46 U	230 U

**Table 2. Summary of Semivolatile Organic Compounds in Post-Excavation Samples, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	<b>Sample Designation:</b>	SB-3 B	SB-3/B-2	SB-3 WSW	SB-3/WSW-2
			<b>Sample Date:</b>	7/10/2014	7/18/2014	7/10/2014	7/18/2014
			<b>Sample Depth (ft bls):</b>	15	17	10	10
			<b>Sample Location:</b>	5530	5530	5530	5530
Hexachlorobenzene	330	6000		13 U	120 U	5 U	140 U
Hexachlorobutadiene	--	--		24 U	210 U	8.9 U	230 U
Hexachlorocyclopentadiene	--	--		110 U	600 U	43 U	660 U
Hexachloroethane	--	--		11 U	170 U	4 U	180 U
Indeno[1,2,3-cd]pyrene	500	5600		<b>3400</b>	280	150	110 J
Isophorone	--	--		120 U	190 U	44 U	210 U
Naphthalene	12000	500000		760 J	210 U	42 U	230 U
Nitrobenzene	--	--		14 U	190 U	5.2 U	210 U
n-Nitrosodi-n-propylamine	--	--		16 U	210 U	6.1 U	230 U
n-Nitrosodiphenylamine	--	--		96 U	170 U	36 U	180 U
Pentachlorophenol	800	6700		290 U	170 U	110 U	180 U
Phenanthrene	100000	500000		6700	490	51 J	150
Phenol	330	500000		130 U	210 U	49 U	230 U
Pyrene	100000	500000		5200	630	130 J	230

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 3. Summary of Metals in Post-Excavation Samples, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in mg/kg)	NYSDEC	NYSDEC	Sample Designation:	SB-3 B	SB-3/B-2	SB-3 WSW	SB-3/WSW-2	PE-1	PE-2	PE-3	PE-3 DUP	
	Part 375	Part 375		Sample Date:	7/10/2014	7/18/2014	7/10/2014	7/18/2014	10/7/2014	10/7/2014	10/7/2014	10/7/2014
	Unrestricted	Commercial		Sample Depth (ft bls):	15	17	10	10	4-5	4-5	4-5	4-5
	Use	(mg/kg)		Sample Location:	5530	5530	5530	5530	5510	5510	5510	5510
Aluminum	--	--		6790	13000	5730	8100	11000	10000	9000	8900	
Antimony	--	--		2.3 J	0.94 J	1.5 U	3.8 J	1.8 J	1.4 J	1.4 J	0.76 J	
Arsenic	13	16		5.1	5.4	6.1	6.3	2.5	1.2	5.8	3	
Barium	350	400		92.2	110	88.7	110	95	130	130	120	
Beryllium	7.2	590		0.32 U	0.28 J	0.26 U	0.29 J	0.58	0.28 J	0.29 J	0.2 J	
Cadmium	2.5	9.3		2.4	1.3	1.7	0.82 J	0.32 J	0.12 J	0.85 U	0.89 U	
Calcium	--	--		72900	25000	54400	43000	13000	11000	51000	43000	
Chromium	30	1500		17.8	24	11	16	24	22	20	23	
Cobalt	--	--		4.6 J	8.2	4.1 J	5.3	7.6	6.9	6.2	5.2	
Copper	50	270		<b>3390</b>	<b>350</b>	<b>1640</b>	<b>300</b>	40	26	31	24	
Iron	--	--		13800	20000	10700	12000	20000	15000	13000	14000	
Lead	63	1000		<b>546</b>	<b>130</b>	<b>328</b>	<b>260</b>	<b>210</b>	<b>450</b>	38	35	
Magnesium	--	--		30300	15000	22500	16000	6800	8900	6800	7000	
Manganese	1600	10000		188	290	170	200	290	250	230	210	
Mercury	0.18	2.8		<b>0.2</b>	0.16	0.14	<b>0.2</b>	<b>0.21</b>	0.1	0.1	0.08	
Nickel	30	310		<b>60.7</b>	20	25.5	16	17	16	12	13	
Potassium	--	--		972 J	2900	890 J	1200	2000	1800	2700	3700	
Selenium	3.9	1500		1.4 U	0.42 J	1.1 U	2.1 U	0.52 J	1.7 U	0.47 J	0.83 J	
Silver	2	1500		0.83 J	1 U	0.52 J	1.1 U	0.27 J	0.2 J	0.3 J	0.89 U	
Sodium	--	--		89.6 U	88 J	73.3 U	92 J	320	110 J	260	270	
Thallium	--	--		2.3 U	2 U	1.9 U	2.1 U	1.8 U	1.7 U	1.7 U	1.8 U	
Vanadium	--	--		18.9	33	19.9	21	30	27	26	30	
Zinc	109	10000		<b>1850</b>	<b>430</b>	<b>1060</b>	<b>430</b>	<b>140</b>	<b>120</b>	81	67	

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

mg/kg - Milligrams per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

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Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

NA - Compound was not analyzed by laboratory

**Table 3. Summary of Metals in Post-Excavation Samples, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in mg/kg)	NYSDEC	NYSDEC	Sample Designation: Sample Date: Sample Depth (ft bls): Sample Location:	PE-4	PE-5	PE-6	PE-7	PE-7 DUP
	Part 375	Part 375		10/7/2014	10/7/2014	10/7/2014	10/7/2014	10/7/2014
	Unrestricted	Commercial		4-5	4-5	4-5	4-5	4-5
	Use	(mg/kg)		5510	5530	5530	5530	5530
Aluminum	--	--	11000	13000	8200	17000	11000	
Antimony	--	--	1.7 J	2.1 J	0.9 J	1.8 J	0.7 J	
Arsenic	13	16	3	11	2.6	0.88 U	0.7 J	
Barium	350	400	110	140	100	160	84	
Beryllium	7.2	590	0.28 J	0.33 J	0.23 J	0.24 J	0.25 J	
Cadmium	2.5	9.3	0.21 J	0.17 J	0.12 J	0.88 U	0.84 U	
Calcium	--	--	26000	22000	59000	3000	1600	
Chromium	30	1500	28	29	17	25	19	
Cobalt	--	--	7.7	9.6	5.8	14	8.4	
Copper	50	270	34	<b>69</b>	36	<b>56</b>	25	
Iron	--	--	17000	20000	13000	27000	17000	
Lead	63	1000	<b>130</b>	<b>460</b>	47	24	17	
Magnesium	--	--	9000	10000	9200	7400	4500	
Manganese	1600	10000	300	340	220	360	240	
Mercury	0.18	2.8	0.16	<b>0.22</b>	0.12	0.15	0.16	
Nickel	30	310	20	21	13	21	14	
Potassium	--	--	2700	4000	2800	4800	2400	
Selenium	3.9	1500	0.84 J	1.7 U	0.44 J	0.45 J	0.36 J	
Silver	2	1500	0.88 U	0.86 U	0.87 U	0.88 U	0.84 U	
Sodium	--	--	350	130 J	420	91 J	67 J	
Thallium	--	--	1.8 U	1.7 U	1.7 U	1.8 U	1.7 U	
Vanadium	--	--	31	36	26	51	31	
Zinc	109	10000	<b>140</b>	<b>150</b>	71	86	55	

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

mg/kg - Milligrams per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

NA - Compound was not analyzed by laboratory

**Table 4. Summary of Pesticides in Post-Excavation Samples, 5520 Broadway, New York, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	<b>Sample Designation:</b> <b>Sample Date:</b> <b>Sample Depth (ft bls):</b> <b>Sample Location:</b>	PE-1	PE-2	PE-3	PE-3 DUP	PE-4
	Part 375	Part 375		10/7/2014	10/7/2014	10/7/2014	10/7/2014	10/7/2014
	Unrestricted	Commercial		4-5	4-5	4-5	4-5	4-5
	Use	(µg/kg)		5510	5510	5510	5510	5510
4,4'-DDD	3.3	92000		1.79 U	1.02 J	1.75 U	1.74 U	0.983 J
4,4'-DDE	3.3	62000		1.79 U	1.67 U	<b>9.52</b>	<b>11</b>	2.18
4,4'-DDT	3.3	47000		3.36 U	2.98 J	<b>3.9</b>	<b>4.98</b>	3.14 J
Aldrin	5	680		1.79 U	1.67 U	1.75 U	1.74 U	1.72 U
alpha-BHC	20	3400		0.746 U	0.696 U	0.731 U	0.727 U	0.715 U
alpha-Chlordane	94	24000		2.24 U	2.09 U	3.5 P	4.03 P	2.14 U
beta-BHC	36	3000		1.79 U	1.67 U	1.75 U	1.74 U	1.72 U
Chlordane	--	--		14.6 U	13.6 U	39.1	29 PI	13.9 U
delta-BHC	40	500000		1.79 U	1.67 U	1.75 U	1.74 U	1.72 U
Dieldrin	5	1400		1.12 U	1.61 P	1.28	1.58	1.08
Endosulfan I	2400	200000		1.79 U	1.67 U	1.75 U	1.74 U	1.72 U
Endosulfan II	2400	200000		1.79 U	1.67 U	1.75 U	1.74 U	1.72 U
Endosulfan sulfate	2400	200000		0.746 U	0.696 U	0.731 U	0.727 U	0.715 U
Endrin ketone	--	--		1.79 U	1.67 U	1.75 U	1.74 U	1.72 U
Endrin	14	89000		0.746 U	0.696 U	0.731 U	0.727 U	0.715 U
gamma-BHC (Lindane)	100	9200		0.746 U	0.696 U	0.731 U	0.727 U	0.715 U
gamma-Chlordane	--	--		2.24 U	2.09 U	4.99 P	3.86 PI	2.14 U
Heptachlor epoxide	--	--		3.36 U	3.13 U	1.1 J	1.44 J	3.22 U
Heptachlor	42	15000		0.895 U	0.836 U	1.1	0.837 J	0.858 U
Methoxychlor	--	--		3.36 U	3.13 U	3.29 U	3.27 U	3.22 U
Toxaphene	--	--		33.6 U	31.3 U	32.9 U	32.7 U	32.2 U

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

p - The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 5. Summary of Volatile Organic Compounds in UST Post-Excavation Samples, 5520 Broadway, New York, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	<b>Sample Designation:</b> 5520 UST BOTTOM	5520 UST ESW	5520 UST NSW
			<b>Sample Date:</b> 10/2/2014	10/2/2014	10/2/2014
			<b>Sample Depth (ft bls):</b> 10	7	7
			<b>Sample Location:</b> 5510 SW USTs	5510 SW USTs	5510 SW USTs
1,2,4,5-Tetramethylbenzene	--	--	4.6 U	4.5 U	4.6 U
1,2,4-Trimethylbenzene	3600	190000	5.8 U	5.7 U	5.7 U
1,3,5-Trimethylbenzene	8400	190000	5.8 U	5.7 U	5.7 U
1,4-Diethylbenzene	--	--	4.6 U	4.5 U	4.6 U
4-Ethyltoluene	--	--	4.6 U	4.5 U	4.6 U
Acetone	50	500000	12 U	11 U	11 U
Benzene	60	44000	1.2 U	1.1 U	1.1 U
Chlorobenzene	1100	500000	1.2 U	1.1 U	1.1 U
Ethylbenzene	1000	390000	1.2 U	1.1 U	1.1 U
Isopropylbenzene	--	--	1.2 U	1.1 U	1.1 U
m+p-Xylene	--	--	2.3 U	2.3 U	2.3 U
Naphthalene	12000	500000	5.8 U	5.7 U	5.7 U
n-Butylbenzene	12000	500000	1.2 U	1.1 U	1.1 U
n-Propylbenzene	3900	500000	1.2 U	1.1 U	1.1 U
o-Xylene	--	--	2.3 U	2.3 U	2.3 U
sec-Butylbenzene	11000	500000	1.2 U	1.1 U	1.1 U
tert-Butylbenzene	5900	500000	5.8 U	5.7 U	5.7 U
Toluene	700	500000	1.7 U	1.7 U	1.7 U
Xylenes (total)	260	500000	2.3 U	2.3 U	2.3 U

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 5. Summary of Volatile Organic Compounds in UST Post-Excavation Samples, 5520 Broadway, New York, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	Sample Designation:	5520 UST SSW	5520 UST WSW	5520 UST WSW DUP	ESW-1
	Part 375	Part 375		Sample Date:	10/2/2014	10/2/2014	10/2/2014
	Unrestricted	Commercial	Sample Depth (ft bls):	7	7	7	7
	Use	(µg/kg)	Sample Location:	5510 SW USTs	5510 SW USTs	5510 SW USTs	5510/N UST
1,2,4,5-Tetramethylbenzene	--	--		5.1 U	4.4 U	4.6 U	4.8 U
1,2,4-Trimethylbenzene	3600	190000		6.4 U	5.5 U	5.7 U	5.9 U
1,3,5-Trimethylbenzene	8400	190000		6.4 U	5.5 U	5.7 U	5.9 U
1,4-Diethylbenzene	--	--		5.1 U	4.4 U	4.6 U	4.8 U
4-Ethyltoluene	--	--		5.1 U	4.4 U	4.6 U	4.8 U
Acetone	50	500000		13 U	11 U	11 U	12 U
Benzene	60	44000		1.3 U	1.1 U	1.1 U	1.2 U
Chlorobenzene	1100	500000		1.3 U	1.1 U	1.1 U	1.2 U
Ethylbenzene	1000	390000		1.3 U	1.1 U	1.1 U	1.2 U
Isopropylbenzene	--	--		1.3 U	1.1 U	1.1 U	1.2 U
m+p-Xylene	--	--		2.6 U	2.2 U	2.3 U	2.4 U
Naphthalene	12000	500000		6.4 U	5.5 U	5.7 U	5.9 U
n-Butylbenzene	12000	500000		1.3 U	1.1 U	1.1 U	1.2 U
n-Propylbenzene	3900	500000		1.3 U	1.1 U	1.1 U	1.2 U
o-Xylene	--	--		2.6 U	2.2 U	2.3 U	2.4 U
sec-Butylbenzene	11000	500000		1.3 U	1.1 U	1.1 U	1.2 U
tert-Butylbenzene	5900	500000		6.4 U	5.5 U	5.7 U	5.9 U
Toluene	700	500000		1.9 U	1.6 U	1.7 U	1.8 U
Xylenes (total)	260	500000		2.6 U	2.2 U	2.3 U	2.4 U

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

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Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 5. Summary of Volatile Organic Compounds in UST Post-Excavation Samples, 5520 Broadway, New York, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	Sample Designation:	ESW-2	NSW-1	NSW-2	SSW-1	SSW-2	WSW-1
			Sample Date:	10/17/2014	10/17/2014	10/17/2014	10/17/2014	10/17/2014	10/17/2014
			Sample Depth (ft bls):	9	7	9	7	9	7
Sample Location: 5510/N UST 5510/N UST 5510/N UST 5510/N UST 5510/N UST 5510/N UST									
1,2,4,5-Tetramethylbenzene	--	--		78	4.6 U	4600	0.46 J	5 U	0.4 J
1,2,4-Trimethylbenzene	3600	190000		13	5.8 U	310 U	5.8 U	6.2 U	6 U
1,3,5-Trimethylbenzene	8400	190000		10 J	5.8 U	310 U	5.8 U	6.2 U	6 U
1,4-Diethylbenzene	--	--		36	4.6 U	1200	4.6 U	5 U	4.8 U
4-Ethyltoluene	--	--		14	4.6 U	240 U	4.6 U	5 U	4.8 U
Acetone	50	500000		85	12 U	610 U	12 U	12 U	12 U
Benzene	60	44000		19	1.2 U	61 U	1.2 U	1.2 U	1.2 U
Chlorobenzene	1100	500000		6.8	1.2 U	61 U	1.2 U	2.5	1.2 U
Ethylbenzene	1000	390000		54	1.2 U	61 U	1.2 U	1.2 U	1.2 U
Isopropylbenzene	--	--		30	1.2 U	240	1.2 U	1.2 U	1.2 U
m+p-Xylene	--	--		19	2.3 U	120 U	2.3 U	2.5 U	2.4 U
Naphthalene	12000	500000		36	5.8 U	310 U	5.8 U	6.2 U	6 U
n-Butylbenzene	12000	500000		28	1.2 U	260	1.2 U	1.2 U	1.2 U
n-Propylbenzene	3900	500000		84	1.2 U	310	1.2 U	1.2 U	1.2 U
o-Xylene	--	--		2.7 J	2.3 U	120 U	2.3 U	2.5 U	2.4 U
sec-Butylbenzene	11000	500000		20	1.2 U	480	1.2 U	1.2 U	1.2 U
tert-Butylbenzene	5900	500000		1.8 J	5.8 U	310 U	5.8 U	6.2 U	6 U
Toluene	700	500000		2.1 J	1.7 U	92 U	1.7 U	1.9 U	1.8 U
Xylenes (total)	260	500000		22 J	2.3 U	120 U	2.3 U	2.5 U	2.4 U

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 5. Summary of Volatile Organic Compounds in UST Post-Excavation Samples, 5520 Broadway, New York, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	Sample Designation: WSW-2 Sample Date: 10/17/2014 Sample Depth (ft bls): 9 Sample Location: 5510/N UST
	Part 375 Unrestricted Use	Part 375 Commercial (µg/kg)	
1,2,4,5-Tetramethylbenzene	--	--	3100
1,2,4-Trimethylbenzene	3600	190000	490
1,3,5-Trimethylbenzene	8400	190000	140 J
1,4-Diethylbenzene	--	--	1300
4-Ethyltoluene	--	--	300
Acetone	50	500000	620 U
Benzene	60	44000	<b>96</b>
Chlorobenzene	1100	500000	62 U
Ethylbenzene	1000	390000	480
Isopropylbenzene	--	--	690
m+p-Xylene	--	--	360
Naphthalene	12000	500000	720
n-Butylbenzene	12000	500000	930
n-Propylbenzene	3900	500000	2800
o-Xylene	--	--	66 J
sec-Butylbenzene	11000	500000	550
tert-Butylbenzene	5900	500000	310 U
Toluene	700	500000	93 U
Xylenes (total)	260	500000	<b>430 J</b>

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 6. Summary of Semivolatile Organic Compounds in UST Post-Excavation Samples, 5520 Broadway, New York, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	<b>Sample Designation:</b> 5520 UST BOTTOM	5520 UST ESW	5520 UST NSW
			<b>Sample Date:</b> 10/2/2014	10/2/2014	10/2/2014
			<b>Sample Depth (ft bls):</b> 10	7	7
			<b>Sample Location:</b> 5510 SW USTs	5510 SW USTs	5510 SW USTs
2-Methylnaphthalene	--	--	220 U	220 U	230 U
Anthracene	100000	500000	110 U	110 U	110 U
Benzo[a]anthracene	1000	5600	140	110 U	110 U
Benzo[a]pyrene	1000	1000	130 J	150 U	150 U
Benzo[b]fluoranthene	1000	5600	180	110 U	48 J
Benzo[g,h,i]perylene	100000	500000	78 J	150 U	150 U
Benzo[k]fluoranthene	800	56000	73 J	110 U	110 U
Chrysene	1000	56000	140	110 U	110 U
Fluoranthene	100000	500000	290	42 J	58 J
Indeno[1,2,3-cd]pyrene	500	5600	93 J	150 U	150 U
Naphthalene	12000	500000	190 U	190 U	190 U
Phenanthrene	100000	500000	53 J	110 U	110 U
Pyrene	100000	500000	220	36 J	51 J

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 6. Summary of Semivolatile Organic Compounds in UST Post-Excavation Samples, 5520 Broadway, New York, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	<b>Sample Designation:</b> 5520 UST SSW	5520 UST WSW	5520 UST WSW DUP	ESW-1
			<b>Sample Date:</b> 10/2/2014	10/2/2014	10/2/2014	10/17/2014
			<b>Sample Depth (ft bls):</b> 7	7	7	7
			<b>Sample Location:</b> 5510 SW USTs	5510 SW USTs	5510 SW USTs	5510/N UST
2-Methylnaphthalene	--	--	250 U	220 U	220 U	230 U
Anthracene	100000	500000	120 U	74 J	110 U	120 U
Benzo[a]anthracene	1000	5600	120 U	170	160	120 U
Benzo[a]pyrene	1000	1000	170 U	140	180	160 U
Benzo[b]fluoranthene	1000	5600	120 U	180	250	120 U
Benzo[g,h,i]perylene	100000	500000	170 U	86 J	110 J	160 U
Benzo[k]fluoranthene	800	56000	120 U	68 J	92 J	120 U
Chrysene	1000	56000	120 U	160	160	120 U
Fluoranthene	100000	500000	120 U	410	210	120 U
Indeno[1,2,3-cd]pyrene	500	5600	170 U	96 J	130 J	160 U
Naphthalene	12000	500000	210 U	180 U	180 U	190 U
Phenanthrene	100000	500000	120 U	320	110 U	120 U
Pyrene	100000	500000	120 U	340	210	120 U

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 6. Summary of Semivolatile Organic Compounds in UST Post-Excavation Samples, 5520 Broadway, New York, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	<b>Sample Designation:</b>	ESW-2	NSW-1	NSW-2	SSW-1	SSW-2	WSW-1
			<b>Sample Date:</b>	10/17/2014	10/17/2014	10/17/2014	10/17/2014	10/17/2014	10/17/2014
			<b>Sample Depth (ft bls):</b>	9	7	9	7	9	7
<b>Sample Location:</b> 5510/N UST 5510/N UST 5510/N UST 5510/N UST 5510/N UST 5510/N UST									
2-Methylnaphthalene	--	--		250 U	220 U	240 U	230 U	290	240 U
Anthracene	100000	500000		130 U	110 U	60 J	110 U	120 U	120 U
Benzo[a]anthracene	1000	5600		130 U	110 U	110 J	110 U	120 U	120 U
Benzo[a]pyrene	1000	1000		170 U	150 U	82 J	150 U	160 U	160 U
Benzo[b]fluoranthene	1000	5600		130 U	110 U	97 J	110 U	120 U	120 U
Benzo[g,h,i]perylene	100000	500000		170 U	150 U	43 J	150 U	160 U	160 U
Benzo[k]fluoranthene	800	56000		130 U	110 U	45 J	110 U	120 U	120 U
Chrysene	1000	56000		130 U	110 U	120	110 U	120 U	120 U
Fluoranthene	100000	500000		130 U	110 U	260	110 U	120 U	120 U
Indeno[1,2,3-cd]pyrene	500	5600		170 U	150 U	48 J	150 U	160 U	160 U
Naphthalene	12000	500000		210 U	190 U	200 U	190 U	250	200 U
Phenanthrene	100000	500000		130 U	110 U	100 J	110 U	120 U	120 U
Pyrene	100000	500000		130 U	110 U	260	110 U	120 U	120 U

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

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**Table 6. Summary of Semivolatile Organic Compounds in UST Post-Excavation Samples, 5520 Broadway, New York, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	Sample Designation: WSW-2 Sample Date: 10/17/2014 Sample Depth (ft bls): 9 Sample Location: 5510/N UST
	Part 375 Unrestricted Use	Part 375 Commercial (µg/kg)	
2-Methylnaphthalene	--	--	1600
Anthracene	100000	500000	120 U
Benzo[a]anthracene	1000	5600	120 U
Benzo[a]pyrene	1000	1000	160 U
Benzo[b]fluoranthene	1000	5600	120 U
Benzo[g,h,i]perylene	100000	500000	160 U
Benzo[k]fluoranthene	800	56000	120 U
Chrysene	1000	56000	120 U
Fluoranthene	100000	500000	120 U
Indeno[1,2,3-cd]pyrene	500	5600	160 U
Naphthalene	12000	500000	2200
Phenanthrene	100000	500000	54 J
Pyrene	100000	500000	120 U

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 7. Summary of Metals in UST Removals, 5520 Broadway, New York, New York**

Parameter (Concentrations in mg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (mg/kg)	Sample Designation:	ESW-1	ESW-2	NSW-1	NSW-2	SSW-1
			Sample Date:	10/17/2014	10/17/2014	10/17/2014	10/17/2014	10/17/2014
			Sample Depth (ft bls):	7	9	7	9	7
			Sample Location:	5510/N UST				
Aluminum	--	--		13000	13000	13000	13000	15000
Antimony	--	--		4.5 U	5 U	4.6 U	4.8 U	4.4 U
Arsenic	13	16		2.9	2.5 U	0.64 J	2.5	2.3
Barium	350	400		78	73	110	74	72
Beryllium	7.2	590		0.32 J	0.33 J	0.46 U	0.43 J	0.36 J
Cadmium	2.5	9.3		0.9 U	1 U	0.91 U	0.96 U	0.89 U
Calcium	--	--		1300	9200	3000	1500	1500
Chromium	30	1500		<b>38</b>	<b>37</b>	14	26	<b>38</b>
Cobalt	--	--		9.2	7.9	15	8.2	8.8
Copper	50	270		22	22	26	20	25
Iron	--	--		17000	16000	25000	16000	18000
Lead	63	1000		45	45	3 J	60	33
Magnesium	--	--		4900	7100	6600	4000	5200
Manganese	1600	10000		320	280	290	190	250
Mercury	0.18	2.8		0.13	0.12	0.07 U	0.069 J	0.17
Nickel	30	310		21	19	16	18	21
Potassium	--	--		2000	2000	3700	1300	2100
Selenium	3.9	1500		1.8 U	2 U	1.8 U	1.9 U	1.8 U
Silver	2	1500		0.9 U	1 U	0.91 U	0.96 U	0.89 U
Sodium	--	--		91 J	100 J	120 J	88 J	98 J
Thallium	--	--		1.8 U	2 U	1.8 U	1.9 U	1.8 U
Vanadium	--	--		32	29	57	28	34
Zinc	109	10000		48	57	55	60	58

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

mg/kg - Milligrams per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

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Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 7. Summary of Metals in UST Removals, 5520 Broadway, New York, New York**

Parameter (Concentrations in mg/kg)	NYSDEC	NYSDEC	<b>Sample Designation:</b>	SSW-2	WSW-1	WSW-2
	Part 375 Unrestricted Use	Part 375 Commercial (mg/kg)				
			<b>Sample Date:</b>	10/17/2014	10/17/2014	10/17/2014
			<b>Sample Depth (ft bls):</b>	9	7	9
			<b>Sample Location:</b>	5510/N UST	5510/N UST	5510/N UST
Aluminum	--	--		10000	13000	12000
Antimony	--	--		4.8 U	1.8 J	4.8 U
Arsenic	13	16		0.43 J	2.6	2.3
Barium	350	400		46	74	75
Beryllium	7.2	590		0.26 J	0.4 J	0.48
Cadmium	2.5	9.3		0.95 U	0.92 U	0.96 U
Calcium	--	--		48000	2000	1800
Chromium	30	1500		20	24	17
Cobalt	--	--		6	7.5	6
Copper	50	270		20	20	12
Iron	--	--		12000	16000	14000
Lead	63	1000		31	54	23
Magnesium	--	--		23000	3700	2700
Manganese	1600	10000		420	320	260
Mercury	0.18	2.8		0.12	0.09	0.03 J
Nickel	30	310		14	17	12
Potassium	--	--		1500	1400	940
Selenium	3.9	1500		1.9 U	1.8 U	1.9 U
Silver	2	1500		0.95 U	0.92 U	0.96 U
Sodium	--	--		110 J	180	130 J
Thallium	--	--		1.9 U	1.8 U	1.9 U
Vanadium	--	--		22	26	20
Zinc	109	10000		56	56	40

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

mg/kg - Milligrams per kilogram

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	USEPA	Sample Designation:	WCN	WCS	WCE/0-10	WCW/0-5	SOIL
	Part 375 Unrestricted Use	Part 375 Commercial (µg/kg)	Regulatory Levels (mg/L)	Sample Date:	1/30/2014	1/30/2014	4/22/2014	4/22/2014	10/17/2014
					-	-	0 - 10	0 - 5	
<b>Volatile Organic Compounds (Concentrations in µg/kg)</b>									
1,1,1-Trichloroethane	680	500000			1.1 U	1.2 U	1.1 U	1.1 U	240 U
1,1,2,2-Tetrachloroethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	240 U
1,1,2-Trichloroethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	360 U
1,1-Dichloroethane	270	240000			1.1 U	1.2 U	1.1 U	1.1 U	360 U
1,1-Dichloroethene	330	500000			1.1 U	1.2 U	1.1 U	1.1 U	240 U
1,1-Dichloroethene	330	500000			NA	NA	NA	NA	5 U
1,2,3-Trichlorobenzene	--	--			1.1 U	1.2 U	1.1 U	1.1 U	1200 U
1,2,4-Trichlorobenzene	--	--			1.1 U	1.2 U	1.1 U	1.1 U	1200 U
1,2-Dibromoethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	720 U
1,2-Dichlorobenzene	1100	500000			1.1 U	1.2 U	1.1 U	1.1 U	1200 U
1,2-Dichloroethane	20	30000			1.1 U	1.2 U	1.1 U	1.1 U	240 U
1,2-Dichloroethene (total)	--	--			NA	NA	NA	NA	240 U
1,2-Dichloropropane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	850 U
1,3-Dichlorobenzene	2400	280000			1.1 U	1.2 U	1.1 U	1.1 U	1200 U
1,3-Dichloropropene	--	--			NA	NA	NA	NA	240 U
1,4-Dichlorobenzene	1800	130000			1.1 U	1.2 U	1.1 U	1.1 U	1200 U
1,4-Dioxane	100	130000			22 U	24 U	22 U	22 U	24000 U
2-Butanone (MEK)	120	500000			8.3	5.4 J	12	5.5 U	2400 U
2-Hexanone	--	--			5.6 U	6 U	5.6 U	5.5 U	2400 U
4-Methyl-2-pentanone (MIBK)	--	--			5.6 U	6 U	5.6 U	5.5 U	2400 U
Acetone	50	500000			<b>87 B</b>	49 B	20 B	4.6 BJ	8700 U
Benzene	60	44000			0.34 J	0.28 J	0.88 J	0.40 J	240 U
Bromochloromethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	1200 U
Bromodichloromethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	240 U
Bromoform	--	--			1.1 U	1.2 U	1.1 U	1.1 U	970 U
Bromomethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	480 U
Carbon disulfide	--	--			1.8	0.55 J	0.53 J	1.1 U	2400 U
Carbon tetrachloride	760	22000			1.1 U	1.2 U	1.1 U	1.1 U	240 U
Chlorobenzene	1100	500000			1.1 U	1.2 U	1.1 U	1.1 U	240 U

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	USEPA	Sample Designation:	WCN	WCS	WCE/0-10	WCW/0-5	SOIL
	Part 375 Unrestricted Use	Part 375 Commercial (µg/kg)	Regulatory Levels (mg/L)	Sample Date:	1/30/2014	1/30/2014	4/22/2014	4/22/2014	10/17/2014
					-	-	0 - 10	0 - 5	
<b>Volatile Organic Compounds (Concentrations in µg/kg) continued</b>									
Chloroethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	480 U
Chloroform	370	350000			1.1 U	1.2 U	0.85 J	1.1 U	360 U
Chloromethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	1200 U
cis-1,2-Dichloroethene	250	500000			1.1 U	1.2 U	1.1 U	1.1 U	240 U
cis-1,3-Dichloropropene	--	--			1.1 U	1.2 U	1.1 U	1.1 U	240 U
Cyclohexane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	100 J
Dibromochloromethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	240 U
Dibromochloropropane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	720 U
Dichlorodifluoromethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	2400 U
Ethylbenzene	1000	390000			1.1 U	1.2 U	120	0.36 J	110 J
Freon 113	--	--			1.1 U	1.2 U	1.1 U	1.1 U	4800 U
Isopropylbenzene	--	--			1.1 U	1.2 U	27	1.1 U	1800
m+p-Xylene	--	--			NA	NA	NA	NA	480 U
Methyl acetate	--	--			5.6 U	6 U	5.6 U	5.5 U	970 U
Methylcyclohexane	--	--			0.39 J	1.2 U	8.7	1.1 U	260 J
Methylene chloride	50	500000			0.74 J	1.7	1.1 U	0.59 J	1200 U
MTBE	930	500000			1.1 U	1.2 U	0.14 J	1.1 U	480 U
n-Propylbenzene	3900	500000			NA	NA	NA	NA	<b>8900 J</b>
o-Xylene	--	--			NA	NA	NA	NA	480 U
Styrene	--	--			1.1 U	1.2 U	1.1 U	1.1 U	480 U
Tetrachloroethene	1300	150000			1.1	0.42 J	0.85 J	1.1 U	240 U
Toluene	700	500000			0.38 J	1.2 U	67	0.23 J	360 U
trans-1,2-Dichloroethene	190	500000			1.1 U	1.2 U	1.1 U	1.1 U	360 U
trans-1,3-Dichloropropene	--	--			1.1 U	1.2 U	1.1 U	1.1 U	240 U
Trichloroethene	470	200000			1.1 U	1.2 U	1.1 U	1.1 U	240 U
Trichlorofluoromethane	--	--			1.1 U	1.2 U	1.1 U	1.1 U	1200 U
Vinyl chloride	20	13000			1.1 U	1.2 U	1.1 U	1.1 U	480 U
Xylenes (total)	260	500000			2.2 U	2.4 U	<b>840</b>	1.4 J	480 U

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	USEPA	Sample Designation:	WCN	WCS	WCE/0-10	WCW/0-5	SOIL
	Part 375 Unrestricted Use	Part 375 Commercial (µg/kg)	Regulatory Levels (mg/L)	Sample Date:	1/30/2014	1/30/2014	4/22/2014	4/22/2014	10/17/2014
					-	-	0 - 10	0 - 5	
<b>Semivolatile Organic Compounds (Concentrations in µg/kg)</b>									
1,1'-Biphenyl	--	--			51 J	55 J	370 U	370 U	NA
1,2,4,5-Tetrachlorobenzene	--	--			370 U	370 U	370 U	370 U	NA
1,4-Dioxane	100	130000			370 U	370 U	370 U	370 U	NA
2,2'-oxybis (1-chloropropane)	--	--			370 U	370 U	370 U	370 U	NA
2,3,4,6-Tetrachlorophenol	--	--			370 U *	370 U *	370 U	370 U	NA
2,4,5-Trichlorophenol	--	--			370 U	370 U	370 U	370 U	NA
2,4,6-Trichlorophenol	--	--			370 U	370 U	370 U	370 U	NA
2,4-Dichlorophenol	--	--			370 U	370 U	370 U	370 U	NA
2,4-Dimethylphenol	--	--			370 U	370 U	370 U	370 U	NA
2,4-Dinitrophenol	--	--			1100 U	1100 U	750 U	750 U	NA
2,4-Dinitrotoluene	--	--			74 U	76 U	75 U	75 U	NA
2,6-Dinitrotoluene	--	--			74 U	76 U	75 U	75 U	NA
2-Chloronaphthalene	--	--			370 U	370 U	370 U	370 U	16 U
2-Chlorophenol	--	--			370 U	370 U	370 U	370 U	NA
2-Methylnaphthalene	--	--			160 J	400	230 J	370 U	310
2-Methylphenol	330	500000			370 U	370 U	370 U	370 U	NA
2-Nitroaniline	--	--			740 U	760 U	370 U	370 U	NA
2-Nitrophenol	--	--			370 U	370 U	370 U	370 U	NA
3,3'-Dichlorobenzidine	--	--			740 U	760 U	370 U	370 U	NA
3-Nitroaniline	--	--			740 U	760 U	370 U	370 U	NA
4,6-Dinitro-2-methylphenol	--	--			1100 U	1100 U	750 U	750 U	NA
4-Bromophenyl phenyl ether	--	--			370 U	370 U	370 U	370 U	NA
4-Chloro-3-methylphenol	--	--			370 U	370 U	370 U	370 U	NA
4-Chloroaniline	--	--			370 U	370 U	370 U	370 U	NA
4-Chlorophenyl phenyl ether	--	--			370 U	370 U	370 U	370 U	NA
4-Methylphenol	330	500000			370 U	370 U	370 U	370 U	NA
4-Nitroaniline	--	--			740 U	760 U	750 U	750 U	NA
4-Nitrophenol	--	--			1100 U	1100 U	370 U	370 U	NA
Acenaphthene	20000	500000			700	200 J	370 U	370 U	56

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	USEPA	Sample Designation:	WCN	WCS	WCE/0-10	WCW/0-5	SOIL
	Part 375 Unrestricted Use	Part 375 Commercial (µg/kg)	Regulatory Levels (mg/L)	Sample Date:	1/30/2014	1/30/2014	4/22/2014	4/22/2014	10/17/2014
					-	-	0 - 10	0 - 5	
<b>Semivolatile Organic Compounds (Concentrations in µg/kg) continued</b>									
Acenaphthylene	100000	500000			370 U	98 J	370 U	370 U	16 U
Acetophenone	--	--			370 U	370 U	370 U	370 U	NA
Anthracene	100000	500000			1800	520	82 J	370 U	49
Atrazine	--	--			370 U	370 U	370 U	370 U	NA
Benzaldehyde	--	--			370 U	370 U	370 U	370 U	NA
Benzo[a]anthracene	1000	5600			<b>3500</b>	<b>1200</b>	300	100	70
Benzo[a]pyrene	1000	1000			<b>3400</b>	<b>1100</b>	310	120	66
Benzo[b]fluoranthene	1000	5600			<b>4000</b>	<b>1200</b>	410	170	80
Benzo[g,h,i]perylene	100000	500000			1100	580	280 J	140 J	45
Benzo[k]fluoranthene	800	56000			<b>1800</b>	480	120	57	26
Bis(2-chloroethoxy)methane	--	--			370 U	370 U	370 U	370 U	NA
Bis(2-chloroethyl) ether	--	--			37 U	37 U	37 U	37 U	NA
Bis(2-ethylhexyl) phthalate	--	--			370 U	370 U	370 U	370 U	NA
Butylbenzyl phthalate	--	--			370 U	370 U	370 U	370 U	NA
Caprolactam	--	--			370 U	370 U	370 U	370 U	NA
Carbazole	--	--			920	110 J	370 U	370 U	NA
Chrysene	1000	56000			<b>3100</b>	<b>1300</b>	340 J	150 J	79
Dibenzo[a,h]anthracene	330	560			<b>490</b>	180	63	32 J	13 J
Dibenzofuran	7000	350000			470	130 J	370 U	370 U	NA
Diethyl phthalate	--	--			370 U	370 U	370 U	370 U	NA
Dimethyl phthalate	--	--			370 U	370 U	370 U	370 U	NA
Di-n-butyl phthalate	--	--			65 J	71 J	370 U	370 U	NA
Di-n-octyl phthalate	--	--			370 U	370 U	370 U	370 U	NA
Fluoranthene	100000	500000			6500	2400	500	200 J	140
Fluorene	30000	500000			840	510	370 U	370 U	98
Hexachlorobenzene	330	6000			37 U	37 U	37 U	37 U	NA
Hexachlorobutadiene	--	--			74 U	76 U	75 U	75 U	NA
Hexachlorocyclopentadiene	--	--			370 U	370 U	370 U	370 U	NA
Hexachloroethane	--	--			37 U	37 U	37 U	37 U	NA

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	USEPA Regulatory Levels (mg/L)	Sample Designation: Sample Date:	WCN 1/30/2014 -	WCS 1/30/2014 -	WCE/0-10 4/22/2014 0 - 10	WCW/0-5 4/22/2014 0 - 5	SOIL 10/17/2014
	<b>Semivolatile Organic Compounds (Concentrations in µg/kg) continued</b>								
Indeno[1,2,3-cd]pyrene	500	5600			<b>1500</b>	<b>660</b>	290	120	41
Isophorone	--	--			120 J	370 U	300 J	120 J	NA
Naphthalene	12000	500000			320 J	170 J	340 J	370 U	16 U
Nitrobenzene	--	--			37 U	37 U	37 U	37 U	NA
n-Nitrosodi-n-propylamine	--	--			37 U	37 U	37 U	37 U	NA
n-Nitrosodiphenylamine	--	--			370 U	370 U	370 U	370 U	NA
Pentachlorophenol	800	6700			1100 U	1100 U	750 U	750 U	NA
Phenanthrene	100000	500000			5100	2700	280 J	140 J	160
Phenol	330	500000			370 U	370 U	370 U	370 U	NA
Pyrene	100000	500000			3700	2000	370	200 J	140
<b>Metals (Concentrations in mg/kg)</b>									
Aluminum	--	--			7860	9630	9230	8930	NA
Antimony	--	--			3.3 U	3.9 U	3.5 U	3.7 U	NA
Arsenic	13	16			3.5	4.8	3	4.1	8.2
Barium	350	400			108	76.7	71.1	123	100
Beryllium	7.2	590			0.51	0.63	0.35 U	0.37 U	NA
Cadmium	2.5	9.3			0.26 J	0.19 J	0.70 U	0.73 U	0.46 U
Calcium	--	--			79300	22300	41400	86400	NA
Chromium	30	1500			16.3	21.7	22.5	27.7	28
Cobalt	--	--			5.1 J	6.5 J	5.6 J	8.3 J	NA
Copper	50	270			<b>61.7</b>	45.7	22.5	37.3	NA
Iron	--	--			13500	16900	14600	22600	NA
Lead	63	1000			<b>83.1</b>	<b>198</b>	49.7	<b>234</b>	47
Magnesium	--	--			32300	11100	9580	10300	NA
Manganese	1600	10000			212	237	259	395	NA
Mercury	0.18	2.8			0.082	0.15	0.1	0.13	<b>0.22</b>
Nickel	30	310			14	18.8	16.8	19.6	NA

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	USEPA Regulatory Levels (mg/L)	Sample Designation: Sample Date:	WCN 1/30/2014 -	WCS 1/30/2014 -	WCE/0-10 4/22/2014 0 - 10	WCW/0-5 4/22/2014 0 - 5	SOIL 10/17/2014
	<b>Metals (Concentrations in mg/kg) continued</b>								
Potassium	--	--			2060	1850	1760	3000	NA
Selenium	3.9	1500			3.3 U	3.9 U	3.5 U	3.7 U	0.19 J
Silver	2	1500			1.6 U	1.9 U	1.7 U	1.8 U	0.46 U
Sodium	--	--			372 J	100 J	154 J	71.9 J	NA
Thallium	--	--			3.3 U	3.9 U	3.5 U	3.7 U	NA
Vanadium	--	--			28.4	27.4	25.6	37	NA
Zinc	109	10000			<b>134</b>	105	88.5	<b>130</b>	NA
<b>Polychlorinated Biphenyls (Concentrations in µg/kg)</b>									
Aroclor-1016	--	--			74 U	76 U	75 U	75 U	38.8 U
Aroclor-1221	--	--			74 U	76 U	75 U	75 U	38.8 U
Aroclor-1232	--	--			74 U	76 U	75 U	75 U	38.8 U
Aroclor-1242	--	--			74 U	76 U	75 U	75 U	38.8 U
Aroclor-1248	--	--			74 U	76 U	75 U	75 U	38.8 U
Aroclor-1254	--	--			74 U	76 U	75 U	75 U	38.8 U
Aroclor-1260	--	--			74 U	76 U	75 U	75 U	38.8 U
Aroclor-1262	--	--			74 U	76 U	75 U	75 U	38.8 U
Aroclor-1268	--	--			74 U	76 U	75 U	75 U	38.8 U
PCBs, Total	100	1000			0	0	75 U	75 U	38.8 U
<b>Pesticides (Concentrations in µg/kg)</b>									
4,4'-DDD	3.3	92000			7.4 U	7.6 U	7.5 U	7.5 U	NA
4,4'-DDE	3.3	62000			7.4 U	7.6 U	7.5 U	7.5 U	NA
4,4'-DDT	3.3	47000			7.4 U	7.6 U	7.5 U	7.5 U	NA
Aldrin	5	680			7.4 U	7.6 U	7.5 U	7.5 U	NA
alpha-BHC	20	3400			7.4 U	7.6 U	7.5 U	7.5 U	NA
beta-BHC	36	3000			7.4 U	7.6 U	7.5 U	7.5 U	NA

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	USEPA Regulatory Levels (mg/L)	Sample Designation: Sample Date:	WCN 1/30/2014 -	WCS 1/30/2014 -	WCE/0-10 4/22/2014 0 - 10	WCW/0-5 4/22/2014 0 - 5	SOIL 10/17/2014
	<b>Pesticides (Concentrations in µg/kg) continued</b>								
Chlordane	--	--			74 U	76 U	75 U	75 U	NA
delta-BHC	40	500000			7.4 U	7.6 U	7.5 U	7.5 U	NA
Dieldrin	5	1400			7.4 U	7.6 U	7.5 U	7.5 U	NA
Endosulfan I	2400	200000			7.4 U	7.6 U	7.5 U	7.5 U	NA
Endosulfan II	2400	200000			7.4 U	7.6 U	7.5 U	7.5 U	NA
Endosulfan sulfate	2400	200000			7.4 U	7.6 U	7.5 U	7.5 U	NA
Endrin aldehyde	--	--			7.4 U	7.6 U	7.5 U	7.5 U	NA
Endrin ketone	--	--			7.4 U	7.6 U	7.5 U	7.5 U	NA
Endrin	14	89000			7.4 U	7.6 U	7.5 U	7.5 U	NA
gamma-BHC (Lindane)	100	9200			7.4 U	7.6 U	7.5 U	7.5 U	NA
Heptachlor epoxide	--	--			7.4 U	7.6 U	7.5 U	7.5 U	NA
Heptachlor	42	15000			7.4 U	7.6 U	7.5 U	7.5 U	NA
Methoxychlor	--	--			7.4 U	7.6 U	7.5 U	7.5 U	NA
Toxaphene	--	--			74 U	76 U	75 U	75 U	NA
<b>General Chemistry</b>									
Burn Rate	--	--		Units	2.2 U	2.2 U	2.20 U	2.20 U	NA
Corrosivity	--	--	< 2 and > 12.5	mm/sec	11.1 HF	8.66 HF	9.12	10.1	NA
Cyanide	27	27		SU	NA	NA	NA	NA	10 U
Cyanide Reactivity	--	--	250 mg/kg	mg/kg	25 U	25 U	25.0 U	25.0 U	NA
Free Liquids	--	--		mg/Kg	0.5 U	0.5 U	0.50 U	0.50 U	NA
Ignitability	--	--	< 140 F	mL/100g	NA	NA	NA	NA	U
pH	--	--	< 2 and > 12.5	NA	11.1 HF	8.66 HF	9.12	10.1	7.9
Sulfide Reactivity	--	--	500 mg/kg	SU	20 U	20 U	20.0 U	20.0 U	10 U
				mg/kg					

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC	NYSDEC	USEPA	Sample Designation:	WCN	WCS	WCE/0-10	WCW/0-5	SOIL
	Part 375 Unrestricted Use	Part 375 Commercial (µg/kg)	Regulatory Levels (mg/L)	Sample Date:	1/30/2014	1/30/2014	4/22/2014	4/22/2014	10/17/2014
					-	-	0 - 10	0 - 5	
<b>TCLP Volatile Organic Compounds (Concentrations in mg/L)</b>									
1,1-Dichloroethene			0.7		0.01 U	0.01 U	0.010 U	0.010 U	NA
1,2-Dichloroethane			0.5		0.01 U	0.01 U	0.010 U	0.010 U	NA
1,4-Dichlorobenzene			7.5		0.01 U	0.01 U	0.010 U	0.010 U	NA
2-Butanone (MEK)			200		0.05 U *	0.05 U *	0.050 U	0.050 U	NA
Benzene			0.5		0.01 U	0.0017 J	0.010 U	0.010 U	NA
Carbon tetrachloride			0.5		0.01 U	0.01 U	0.010 U	0.010 U	NA
Chlorobenzene			100		0.01 U	0.01 U	0.010 U	0.010 U	NA
Chloroform			6		0.01 U	0.01 U	0.010 U	0.010 U	NA
Tetrachloroethene			0.7		0.01 U	0.01 U	0.010 U	0.010 U	NA
Trichloroethene			0.5		0.01 U	0.01 U	0.010 U	0.010 U	NA
Vinyl chloride			0.2		0.01 U	0.01 U	0.010 U	0.010 U	NA
<b>TCLP Semivolatile Organic Compounds (Concentrations in mg/L)</b>									
1,4-Dichlorobenzene			7.5		0.04 U	0.04 U	0.040 U	0.040 U	NA
2,4,5-Trichlorophenol			400		0.04 U	0.04 U	0.040 U	0.040 U	NA
2,4,6-Trichlorophenol			2		0.04 U	0.04 U	0.040 U	0.040 U	NA
2,4-Dinitrotoluene			0.13		0.008 U	0.008 U	0.0080 U	0.0080 U	NA
2-Methylphenol			200		0.04 U	0.04 U	0.040 U	0.040 U	NA
3&4-Methylphenol			200		0.04 U	0.04 U	0.040 U	0.040 U	NA
Hexachlorobenzene			0.13		0.004 U *	0.004 U *	0.0040 U	0.0040 U	NA
Hexachlorobutadiene			0.5		0.008 U	0.008 U	0.0080 U	0.0080 U	NA
Hexachloroethane			3		0.004 U	0.004 U	0.0040 U	0.0040 U	NA
Nitrobenzene			2		0.004 U	0.004 U	0.0040 U	0.0040 U	NA
Pentachlorophenol			100		0.12 U	0.12 U	0.12 U	0.12 U	NA
Pyridine			5		0.04 U	0.04 U	0.040 U	0.040 U	NA

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in µg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (µg/kg)	USEPA Regulatory Levels (mg/L)	Sample Designation: Sample Date:	WCN 1/30/2014 -	WCS 1/30/2014 -	WCE/0-10 4/22/2014 0 - 10	WCW/0-5 4/22/2014 0 - 5	SOIL 10/17/2014
	<b>TCLP Metals (Concentrations in mg/L)</b>								
Arsenic			5		0.075 U	0.075 U	0.075 U	0.075 U	1 U
Barium			100		0.577 J	0.833 J	0.349 J	0.725 J	0.72
Cadmium			1		0.02 U	0.0038 J	0.02 U	0.02 U	0.1 U
Chromium			5		0.05 U	0.05 U	0.05 U	0.05 U	0.2 U
Lead			5		0.0241 J	0.351	0.057	0.203	0.24 J
Mercury			0.2		0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.001 U
Selenium			1		0.1 U	0.1 U	0.1 U	0.1 U	0.04 J
Silver			5		0.05 U	0.05 U	0.05 U	0.05 U	0.1 U
<b>TCLP Polychlorinated Biphenyls (Concentrations in mg/L)</b>									
Aroclor-1016			--				0.00050 U	0.00050 U	NA
Aroclor-1221			--				0.00050 U	0.00050 U	NA
Aroclor-1232			--				0.00050 U	0.00050 U	NA
Aroclor-1242			--				0.00050 U	0.00050 U	NA
Aroclor-1248			--				0.00050 U	0.00050 U	NA
Aroclor-1254			--				0.00050 U	0.00050 U	NA
Aroclor-1260			--				0.00050 U	0.00050 U	NA
Aroclor-1262			--				0.00050 U	0.00050 U	NA
Aroclor-1268			--				0.00050 U	0.00050 U	NA
Total PCBs			--				0.00050 U	0.00050 U	NA
<b>TCLP Pesticides (Concentrations in mg/L)</b>									
Chlordane			0.03		0.005 U	0.005 U	0.0050 U	0.0050 U	NA
Endrin			0.02		0.0005 U	0.0005 U	0.00050 U	0.00050 U	NA
gamma-BHC (Lindane)			0.4		0.0005 U	0.0005 U	0.00050 U	0.00050 U	NA
Heptachlor			0.008		0.0005 U	0.0005 U	0.00050 U	0.00050 U	NA
Heptachlor epoxide			0.008		0.0005 U	0.0005 U	0.00050 U	0.00050 U	NA
Methoxychlor			10		0.0005 U	0.0005 U	0.00050 U	0.00050 U	NA
Toxaphene			0.5		0.005 U	0.005 U	0.0050 U	0.0050 U	NA

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in mg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (mg/kg)	<b>Sample Designation:</b> <b>Sample Date:</b>	WCN 1 1/30/2014 0-2	WCN 1 1/30/2014 2-4	WCN 2 1/30/2014 0-2	WCN 3 1/30/2014 0-2	WCN 3 1/30/2014 12-14	WCN 3 1/30/2014 6-8
	<b>Site:</b>								
DROD (C9-C44)	--	--		NA	NA	NA	NA	NA	NA
Gasoline Range Organics	--	--		2.6 U	3.2 U	3.1 U	2.9 U H	3.2 U	2.7 U
Petroleum Hydrocarbons C10-C44	--	--		230	130	300	240	11 U	9.2 U

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

B - The analyte was found in an associated blank as well as in the sample

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

mm/sec - Millimeters per second

mL/100g - Milliliters per 100 grams

PCBs - Polychlorinated Biphenyls

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

TCLP - Toxicity Characteristic Leaching Procedure

mg/L - Milligrams per liter

USEPA - United States Environmental Protection Agency

USEPA Regulatory Levels - United States Environmental Protection

Agency Limits for RCRA Characteristic Waste for Toxicity

RCRA - Resource Conservation and Recovery Act

Bold - Parameter was detected above USEPA Regulatory Limits

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in mg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (mg/kg)	<b>Sample Designation:</b> <b>Sample Date:</b>	WCS 1 1/30/2014 2-4	WCS 2 1/30/2014 13-15	WCS 2 1/30/2014 2-4	WCS 2 1/30/2014 6-8	WCS 3 1/30/2014 12-14	WCS 3 1/30/2014 2-4
	<b>Site:</b>								
DROD (C9-C44)	--	--		NA	NA	NA	NA	NA	NA
Gasoline Range Organics	--	--		2.9 U	44	2.6 U	3.5 U	3.2 U	2.8 U
Petroleum Hydrocarbons C10-C44	--	--		94	3600	630	250	82	91

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mg/kg - Milligrams per kilogram

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RCRA - Resource Conservation and Recovery Act

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**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in mg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (mg/kg)	Sample Designation: Sample Date:	WCS 3 1/30/2014 6-8	WC-TPH-2 10/20/2014	WC-TPH-3 10/20/2014	WCE-A-0-2.5 4/22/2014 0 - 2.5	WCE-A-2.5-5 4/22/2014 2.5 - 5
	<b>Site:</b>							
DROD (C9-C44)	--	--		NA	1360	850	NA	NA
Gasoline Range Organics	--	--		3.3 U	56	140	2.7 U	2.7 U
Petroleum Hydrocarbons C10-C44	--	--		94	NA	NA	200	61

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B - The analyte was found in an associated blank as well as in the sample

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

mm/sec - Millimeters per second

mL/100g - Milliliters per 100 grams

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TCLP - Toxicity Characteristic Leaching Procedure

mg/L - Milligrams per liter

USEPA - United States Environmental Protection Agency

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Agency Limits for RCRA Characteristic Waste for Toxicity

RCRA - Resource Conservation and Recovery Act

Bold - Parameter was detected above USEPA Regulatory Limits

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in mg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (mg/kg)	Sample Designation: Sample Date:	WCE-B-0-2 4/22/2014	WCE-B-2-4 4/22/2014	WCE-B-4-5 4/22/2014	WCE-C-0-3 4/22/2014	WCE-C-3-5 4/22/2014
				0 - 2	2 - 4	4 - 5	0 - 3	3 - 5
<b>Site:</b>								
DROD (C9-C44)	--	--		NA	NA	NA	NA	NA
Gasoline Range Organics	--	--		2.5 U	2.6 U	2.6 U	2.7 U	2.8 U
Petroleum Hydrocarbons C10-C44	--	--		250	270	290	1100	1500

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

B - The analyte was found in an associated blank as well as in the sample

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

mm/sec - Millimeters per second

mL/100g - Milliliters per 100 grams

PCBs - Polychlorinated Biphenyls

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NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

TCLP - Toxicity Characteristic Leaching Procedure

mg/L - Milligrams per liter

USEPA - United States Environmental Protection Agency

USEPA Regulatory Levels - United States Environmental Protection

Agency Limits for RCRA Characteristic Waste for Toxicity

RCRA - Resource Conservation and Recovery Act

Bold - Parameter was detected above USEPA Regulatory Limits

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in mg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (mg/kg)	<b>Sample Designation:</b>	WCE-C-5-6	WCE-C-6-8	WCE-C-8-10	WCW-A-0-2	WCW-A-3-5
			<b>Sample Date:</b>	4/22/2014	4/22/2014	4/22/2014	4/22/2014	4/22/2014
				5 - 6	6 - 8	8 - 10	0 - 2	3 - 5
<b>Site:</b>								
DROD (C9-C44)	--	--		NA	NA	NA	NA	NA
Gasoline Range Organics	--	--		2.8 U	160	3.3	2.6 U	2.7 U
Petroleum Hydrocarbons C10-C44	--	--		1300	460	220	1000	440

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

B - The analyte was found in an associated blank as well as in the sample

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

mm/sec - Millimeters per second

mL/100g - Milliliters per 100 grams

PCBs - Polychlorinated Biphenyls

ft bls - Feet below land surface

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

TCLP - Toxicity Characteristic Leaching Procedure

mg/L - Milligrams per liter

USEPA - United States Environmental Protection Agency

USEPA Regulatory Levels - United States Environmental Protection

Agency Limits for RCRA Characteristic Waste for Toxicity

RCRA - Resource Conservation and Recovery Act

Bold - Parameter was detected above USEPA Regulatory Limits

**Table 8. Summary of Waste Characterization Sample Results, 5520 Broadway, Bronx, New York**

Parameter (Concentrations in mg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Commercial (mg/kg)	Sample Designation: Sample Date:	WCW-B-0-2 4/22/2014 0 - 2	WCW-B-3-5 4/22/2014 3 - 5	WCW-C-0-2 4/22/2014 0 - 2	WCW-C-3-5 4/22/2014 3 - 5	SOIL 10/17/2014
	<b>Site:</b>							
DROD (C9-C44)	--	--		NA	NA	NA	NA	2110
Gasoline Range Organics	--	--		2.6 U	2.7 U	2.6 U	2.9 U	140
Petroleum Hydrocarbons C10-C44	--	--		1400	530	720	77	NA

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

B - The analyte was found in an associated blank as well as in the sample

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

mm/sec - Millimeters per second

mL/100g - Milliliters per 100 grams

PCBs - Polychlorinated Biphenyls

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NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use Standards

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Commercial Standards

TCLP - Toxicity Characteristic Leaching Procedure

mg/L - Milligrams per liter

USEPA - United States Environmental Protection Agency

USEPA Regulatory Levels - United States Environmental Protection

Agency Limits for RCRA Characteristic Waste for Toxicity

RCRA - Resource Conservation and Recovery Act

Bold - Parameter was detected above USEPA Regulatory Limits

**FIGURES**

1. Site Location Map
2. Site Plan
3. Site Plan with Surrounding Properties
4. Post-Excavation Sample Results
5. UST Post-Excavation Sample Results and Backfill Areas



QUADRANGLE LOCATION



SOURCE:  
USGS; Yonkers, NY-NJ (1998)  
and Central Park, NY-NJ (1995)  
7.5 Minute Topographic Quadrangles



Title:

**SITE LOCATION MAP**

5510/5530 BROADWAY  
BRONX, NEW YORK 10463  
REMEDIAL ACTION REPORT

Prepared for:

**EQUITY ONE, INC.**

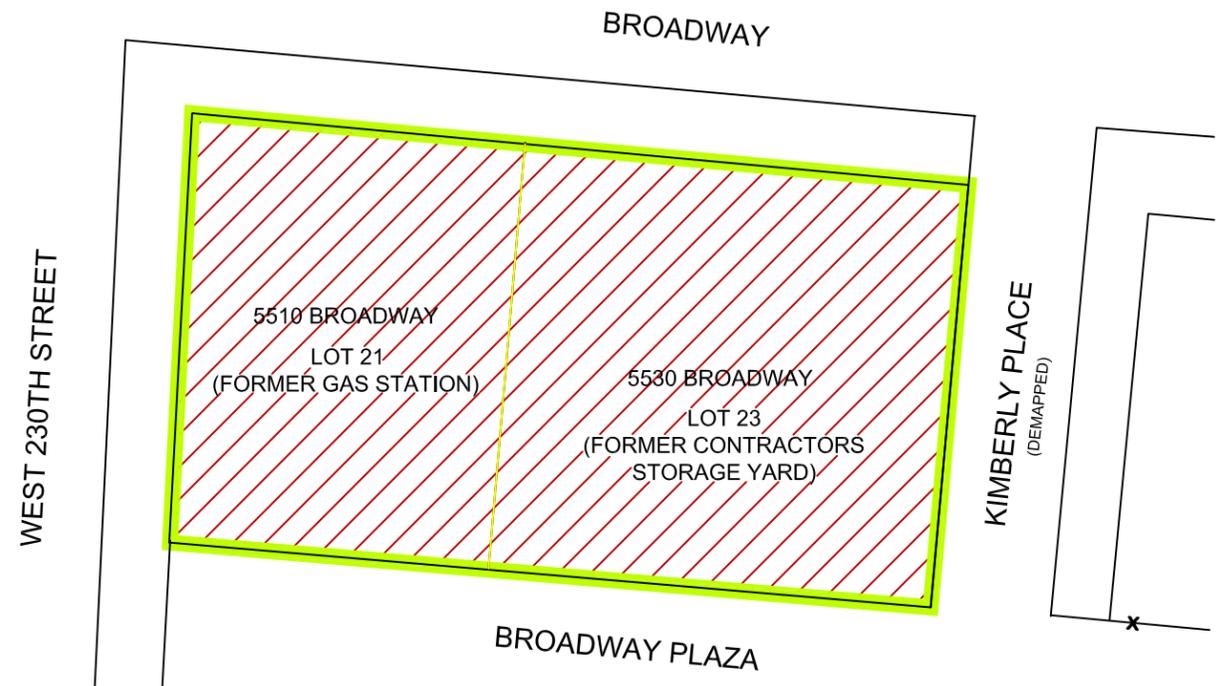
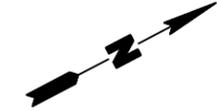
**ROUX**  
ROUX ASSOCIATES, INC.  
Environmental Consulting  
& Management

Compiled by: W.M.	Date: 14OCT15
Prepared by: B.H.C.	Scale: AS SHOWN
Project Mgr.: W.M.	Project No.: 1924.0008Y000
File: 1924.0008Y106R.01.CDR	

FIGURE

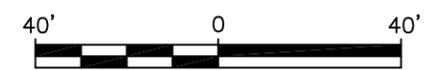
**1**

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**LEGEND**

-  SITE BOUNDARY INCLUDING
-  REDEVELOPMENT AND COMPOSITE COVER (1 TO 2 STORY RETAIL BUILDING)



Title:			
<b>SITE PLAN</b>			
5510/5530 BROADWAY BRONX, NEW YORK 10463 REMEDIAL ACTION REPORT			
Prepared For:			
EQUITY ONE, INC.			
 <b>ROUX ASSOCIATES, INC.</b> <i>Environmental Consulting &amp; Management</i>	Compiled by: J.G.	Date: 14OCT15	<b>FIGURE</b>  <b>2</b>
	Prepared by: B.H.C.	Scale: AS SHOWN	
	Project Mgr: W.M.	Project: 1924.0008Y000	
	File: 1924.0008Y106R.02.DWG		



**Residential**

**Retail Stores**

**Retail Stores**

**Retail Stores**

**Retail Stores**

**SITE**

**BROADWAY PLAZA**

**Commercial / Light Industrial**



Title:

**SITE PLAN  
WITH SURROUNDING PROPERTIES**

5510/5530 BROADWAY  
BRONX, NEW YORK 10463  
REMEDIAL ACTION REPORT

Prepared for:

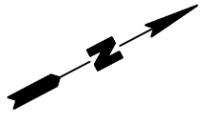
EQUITY ONE, INC.

**ROUX**  
ROUX ASSOCIATES, INC.  
Environmental Consulting  
& Management

Compiled by: W.M.	Date: 14OCT15
Prepared by: B.H.C.	Scale: AS SHOWN
Project Mgr.: W.M.	Project No.: 1924.0008Y000
File: 1924.0008Y106R.01.CDR	

FIGURE

**3**



<b>PE-3</b>	10/7/14	10/7/14
		DUP
Depth (ft bls)	4-5	4-5
Metals	NE	NE
<b>Pesticides</b>		
4,4'-DDE	9.52	11
4,4'-DDT	3.9	4.98

<b>PE-5</b>	10/7/14
Depth (ft bls)	4-5
SVOCs	NE
<b>Metals</b>	
Copper	69
Lead	460
Mercury	0.22
Zinc	150

<b>SB-3 WSW / WSW-2</b>	7/10/14	7/18/14
Depth (ft bls)	10	10
SVOCs	NE	NE
<b>Metals</b>		
Copper	1640	300
Lead	328	260
Mercury	NE	0.2
Zinc	1060	430

<b>SB-3 WSW</b>	7/10/14
Depth (ft bls)	
SVOCs	NE
<b>Metals</b>	
Copper	1640
Lead	328
Zinc	1060

<b>PE-4</b>	10/7/14
Depth (ft bls)	4-5
<b>Metals</b>	
Lead	130
Zinc	140
<b>Pesticides</b>	NE

<b>PE-1</b>	10/7/14
Depth (ft bls)	4-5
<b>Metals</b>	
Lead	210
Mercury	0.21
Zinc	140
<b>Pesticides</b>	NE

<b>PE-2</b>	10/7/14
Depth (ft bls)	4-5
<b>Metals</b>	
Lead	450
Zinc	120
<b>Pesticides</b>	NE

<b>PE-7</b>	10/7/14	10/7/14
		DUP
Depth (ft bls)	4-5	4-5
SVOCs	NE	NE
<b>Metals</b>		
Copper	56	NE

<b>PE-6</b>	10/7/14
Depth (ft bls)	4-5
SVOCs	NE
<b>Metals</b>	NE

<b>SB-3/B-2</b>	7/18/14
Depth (ft bls)	
SVOCs	NE
<b>Metals</b>	
Copper	350
Lead	130
Zinc	430

<b>SB-3 B / B-2</b>	7/10/14	7/18/14
	SB-3B	SB-3/B2
Depth (ft bls)	15	17
<b>SVOCs</b>		
Benzo[a]anthracene	3700	NE
Benzo[a]pyrene	3300	NE
Benzo[b]fluoranthene	3800	NE
Benzo[k]fluoranthene	1800	NE
Chrysene	3600	NE
Dibenzo[a,h]anthracene	770	NE
Indeno[1,2,3-cd]pyrene	3400	NE
<b>Metals</b>		
Copper	3390	350
Lead	546	130
Mercury	0.2	NE
Nickel	60.7	NE
Zinc	1850	430

**LEGEND**

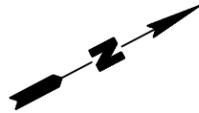
- SITE BOUNDARY
- PE-1 POST EXCAVATION SOIL SAMPLE LOCATION WITH IDENTIFICATION
- SB-3 HOT SPOT EXCAVATION (APPROXIMATELY 10'x13'x17' DEEP)

Parameter (Concentrations in µg/kg)	Standards* (µg/kg)	Standards** (µg/kg)
<b>SVOCs</b>		
Benzo[a]anthracene	1000	5600
Benzo[a]pyrene	1000	1000
Benzo[b]fluoranthene	1000	5600
Benzo[k]fluoranthene	800	56000
Chrysene	1000	56000
Dibenzo[a,h]anthracene	330	560
Indeno[1,2,3-cd]pyrene	500	5600
<b>Metals</b>		
Copper	50	270
Lead	63	1000
Mercury	0.18	2.8
Nickel	30	310
Zinc	109	10000
<b>Pesticides</b>		
4,4'-DDE	3.3	62000
4,4'-DDT	3.3	47000

Concentrations in µg/kg  
 µg/kg - Micrograms per kilogram  
 \*NYSDEC Part 375 Unrestricted Use Standards  
 \*\*NYSDEC Part 375 Restricted Use Commercial Standards  
 NYSDEC - New York State Department of Environmental Conservation  
 J - Estimated value  
 DUP - Duplicate Sample  
 VOCs - Volatile Organic Compounds  
 SVOCs - Semivolatile Organic Compounds  
 NE - No exceedance  
 ft bls - Feet below land surface



Title:			
<b>POST EXCAVATION SAMPLE RESULTS</b>			
5510/5530 BROADWAY BRONX, NEW YORK 10463 REMEDIAL ACTION REPORT			
Prepared For:			
EQUITY ONE, INC.			
	Compiled by: J.G.	Date: 14OCT15	FIGURE <b>4</b>
	Prepared by: B.H.C.	Scale: AS SHOWN	
	Project Mgr: W.M.	Project: 1924.0008Y000	
	File: 1924.0008Y106R.02.DWG		



<b>5520 UST WSW</b>	10/2/14	10/2/14
Depth (ft bls)	7	7
VOCs	NE	NE
Metals	NA	NA

<b>5520 UST SSW</b>	10/2/14
Depth (ft bls)	7
VOCs	NE
Metals	NA

<b>5520 UST BOTTOM</b>	10/2/14
Depth (ft bls)	10
VOCs	NE
Metals	NA

<b>5520 UST ESW</b>	10/2/14
Depth (ft bls)	7
VOCs	NE
Metals	NA

<b>SSW-1</b>	10/17/14
Depth (ft bls)	7
VOCs	NE
Metals	
Chromium	38

<b>SSW-2</b>	10/17/14
Depth (ft bls)	9
VOCs	NE
Metals	NE

<b>5520 UST NSW</b>	10/2/14
Depth (ft bls)	7
VOCs	NE
Metals	NA

<b>WSW-1</b>	10/17/14
Depth (ft bls)	7
VOCs	NE
Metals	NE

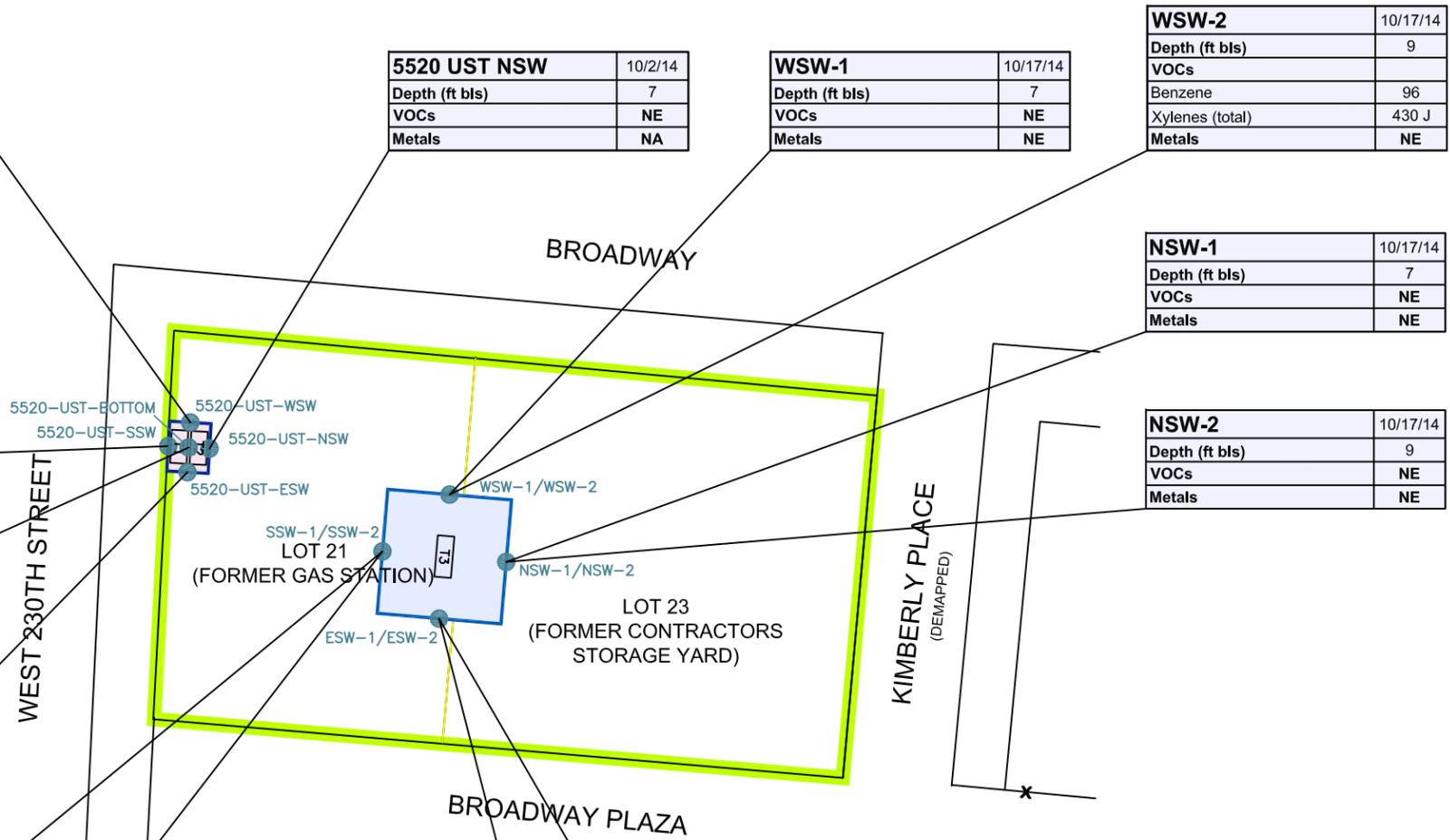
<b>WSW-2</b>	10/17/14
Depth (ft bls)	9
VOCs	
Benzene	96
Xylenes (total)	430 J
Metals	NE

<b>NSW-1</b>	10/17/14
Depth (ft bls)	7
VOCs	NE
Metals	NE

<b>NSW-2</b>	10/17/14
Depth (ft bls)	9
VOCs	NE
Metals	NE

<b>ESW-1</b>	10/17/14
Depth (ft bls)	7
VOCs	NE
Metals	
Chromium	38

<b>ESW-2</b>	10/17/14
Depth (ft bls)	9
VOCs	NE
Metals	
Chromium	37



**LEGEND**

- SITE BOUNDARY
- UST POST EXCAVATION SOIL SAMPLE LOCATION WITH SAMPLE IDENTIFICATION
- T1 LOCATION OF UNDOCUMENTED USTs (REMOVED)
- USTs-T1, T2 EXCAVATION (APPROXIMATELY 10'x12'x10' DEEP)
- UST-T3 EXCAVATION/BACKFILL AREA (APPROXIMATELY 30'x30'x10' DEEP)

Parameter (Concentrations in µg/kg)	Standards* (µg/kg)	Standards** (µg/kg)
<b>VOCs</b>		
Benzene	60	44000
Xylenes (total)	260	500000
<b>Metals</b>		
Chromium	30	1500

Concentrations in µg/kg  
 µg/kg - Micrograms per kilogram  
 \*NYSDEC Part 375 Unrestricted Use Standards  
 \*\*NYSDEC Part 375 Restricted Use Commercial Standards  
 NYSDEC - New York State Department of Environmental Conservation  
 J - Estimated value  
 DUP - Duplicate Sample  
 VOCs - Volatile Organic Compounds  
 SVOCs - Semivolatile Organic Compounds  
 NE - No exceedance  
 ft bls - Feet below land surface  
 All SVOC detections were below the NYSDEC Part Unrestricted Use Standards

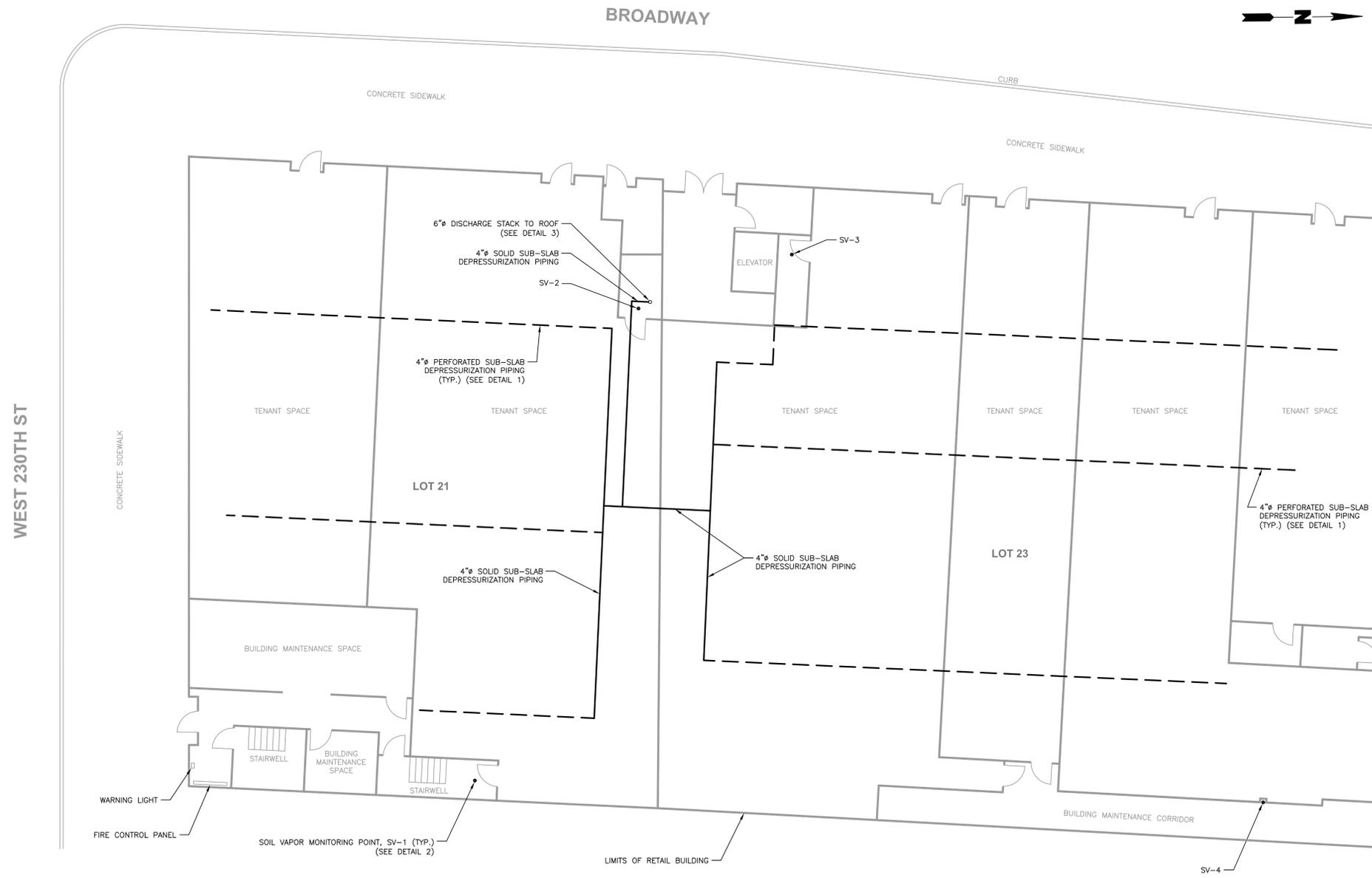


Title: **UST POST EXCAVATION SAMPLE RESULTS AND BACKFILL AREAS**

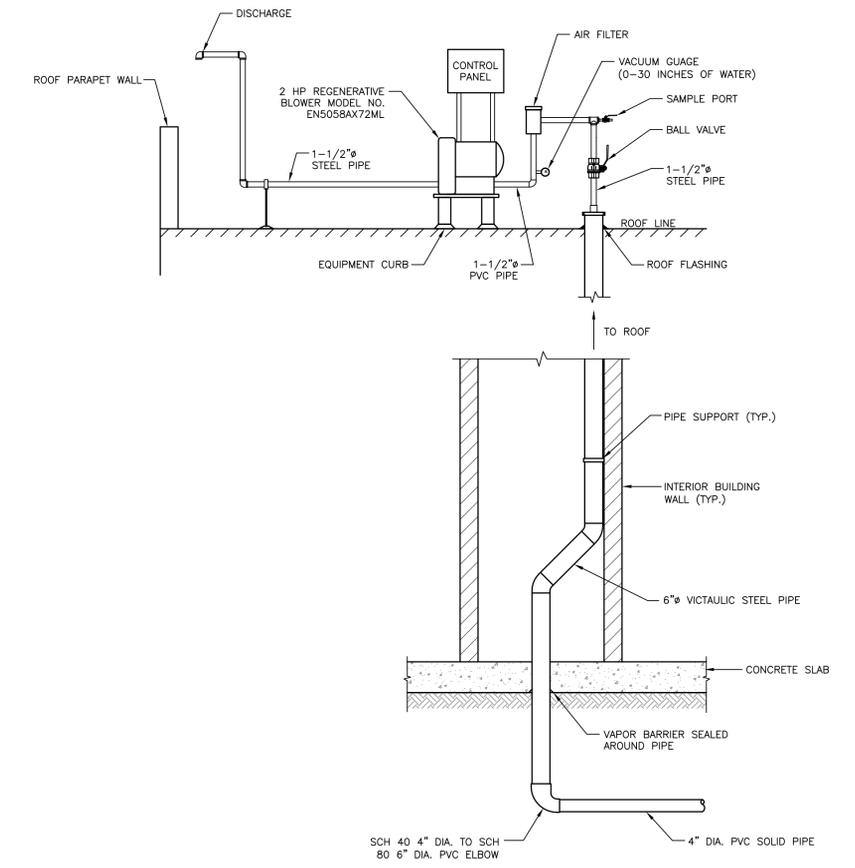
5510/5530 BROADWAY  
 BRONX, NEW YORK 10463  
 REMEDIAL ACTION REPORT

Prepared For: **EQUITY ONE, INC.**

	Compiled by: J.G.	Date: 14OCT15	FIGURE
	Prepared by: B.H.C.	Scale: AS SHOWN	
	Project Mgr: W.M.	Project: 1924.0008Y000	
	File: 1924.0008Y106R.02.DWG	<b>5</b>	

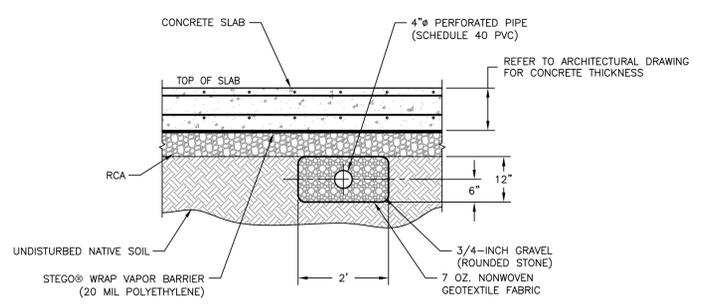


**ACTIVE SUB-SLAB DEPRESSURIZATION SYSTEM PLAN**  
SCALE: 1"=10'



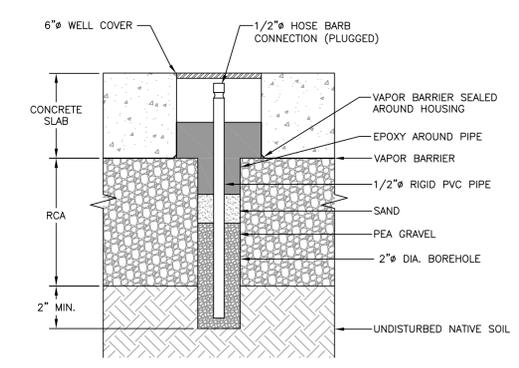
**3 VERTICAL RISER TO BLOWER DETAIL**  
NOT TO SCALE

NOTE  
WARNING LIGHT LOCATED ADJACENT TO FIRE CONTROL PANEL.



**1 SUB-SLAB DEPRESSURIZATION SYSTEM PIPE DETAIL**  
NOT TO SCALE

NOTE  
ALL SUB-SLAB PIPING HAS PIPE HANGERS APPROXIMATELY EVERY 10 FEET.



**2 SOIL VAPOR MONITORING POINT DETAIL**  
SCALE: 1" = 4'

Title: <b>ACTIVE SUB-SLAB DEPRESSURIZATION SYSTEM AS-BUILT</b>			
5510/5530 BROADWAY BRONX, NEW YORK REMEDIAL ACTION WORK PLAN			
Prepared For: EQUITY ONE, INC.			
Compiled by: G.N.	Date: 15OCT15	PLATE	
Prepared by: G.M.	Scale: AS SHOWN		
Project Mgr: G.N.	Project: 1924.0005Y00		
File: 1924.0008Y106.03.DWG			